NSW VIS Classification Web 2.1

Public User Manual

NSW GOVERNMENT | Office of Environment & Heritage

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Published by:
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This data base may be referenced as OEH (2014) Vegetation Information System Classification database. NSW Office of Environment and Heritage <www.environment.nsw.gov.au/NSWVCA20PRapp/LoginPR.aspx> accessed dd Month yyyy.

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ISBN 978 1 74359 590 9
OEH 2014/0286
March 2014

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1. Introduction

This manual is to provide support for Public Users in the operations of the New South Wales Office of Environment and Heritage's (OEH) Vegetation Information System Classification Database version 2.1. It is presented as a step-by-step approach, with additional documentation to assist users provided as relevant, both from within this document and from the further information links provided in the web database pages.

Throughout the document, boxed text (as used here) has been used to highlight issues for users to note, or to provide background information.

Any queries with regard to this manual can be directed to: vis@environment.nsw.gov.au.

2. Background

2.1 What is the Vegetation Information System Classification?

The Vegetation Information System Classification (VIS Classification) is the database for plant community types in New South Wales. The development of the classification database is an integral part of the NSW Vegetation Information System (NSW VIS), which aims to provide a single, integrated source for vegetation information in NSW.

The aim of the NSW VIS Classification database is to produce a consistent hierarchical vegetation classification of New South Wales plant community types, and to provide public access to information on these plant community types. This version of the VIS Classification is a further development of the Vegetation Classification and Assessment (VCA) web enabled version released as VCA1.1. This further builds on the original NSW VCA system developed by the Royal Botanic Gardens Trust (RBGT), and published in the scientific journal *Cunninghamia* (Benson 2006; Benson, *et al.* 2006; Benson 2008; and Benson *et al.* 2010).

The NSW Plant Community Type classification has been constructed by integrating two existing vegetation classification databases: the NSW Vegetation Classification and Assessment database developed by the RBGT; and the Over-cleared BioMetric Vegetation Types Database developed for used in Property Vegetation Planning and BioBanking assessment processes. By integrating this information into one system, VIS Classification establishes a single NSW Master Plant Community Type list as the focal point for both vegetation type mapping and regulatory assessment processes.

Further background information on the development of the NSW vegetation Information System and its components can be found on the OEH web site: http://www.environment.nsw.gov.au/research/VegetationInformationSystem.htm.

2.2 Role of the OEH Biodiversity Information Unit

The development of the NSW VIS is being coordinated by the Biodiversity Information Unit within the Science Division of the NSW Office of Environment and Heritage. This unit is developing and supporting the NSW VIS, BioNet-Atlas, Threatened Species Profiles Database and other native vegetation and biodiversity projects and programs as part of OEH's strategic leadership of native biodiversity information management. One of the key objectives for the unit, and the NSW VIS database in particular, is to ensure effective access to and appropriate use of,

the full range of vegetation information for NSW, including plot, classification and mapping data and products.

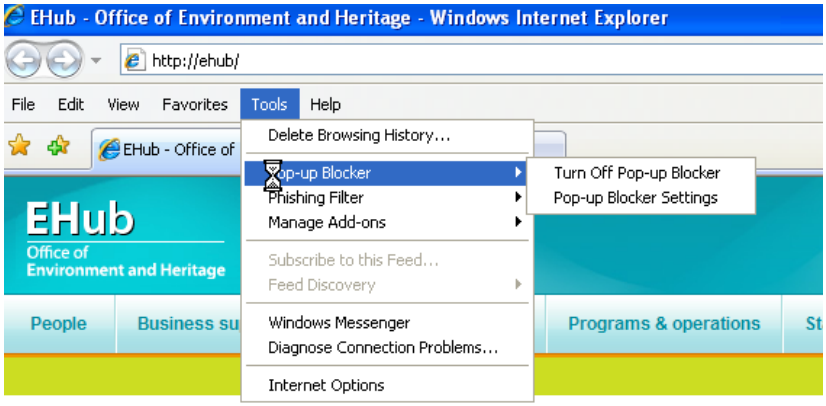
For further information on the role of the unit, the NSW VIS Project or OEH's role in vegetation and biodiversity information, please contact the OEH Biodiversity Information Unit (vis@environment.nsw.gov.au).

3. Possible Technical Issues

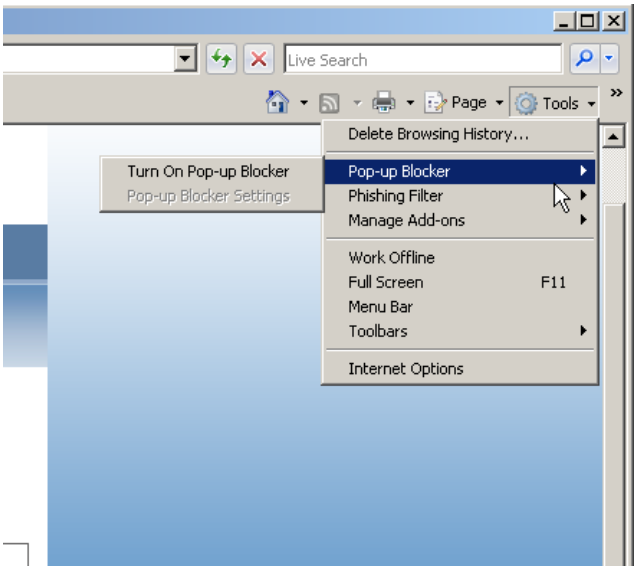
If you are using Microsoft's Internet Explorer, pleased note that sometimes Internet Explorer may inhibit the retrieval of cached information. If, during use, you find that pages or areas are not refreshing as expected (e.g. clicking on options radio buttons does not clear previous selections), please refer to the information provided in Attachment 1 Possible Internet Explorer Issues.

Also please note that to enable some functions, including producing reports, you may need to have the Pop Up Blocker turned off. In Internet Explorer, you can do this via the Tools menu, as shown below (two options, depending on the layout you have).

Option 1:



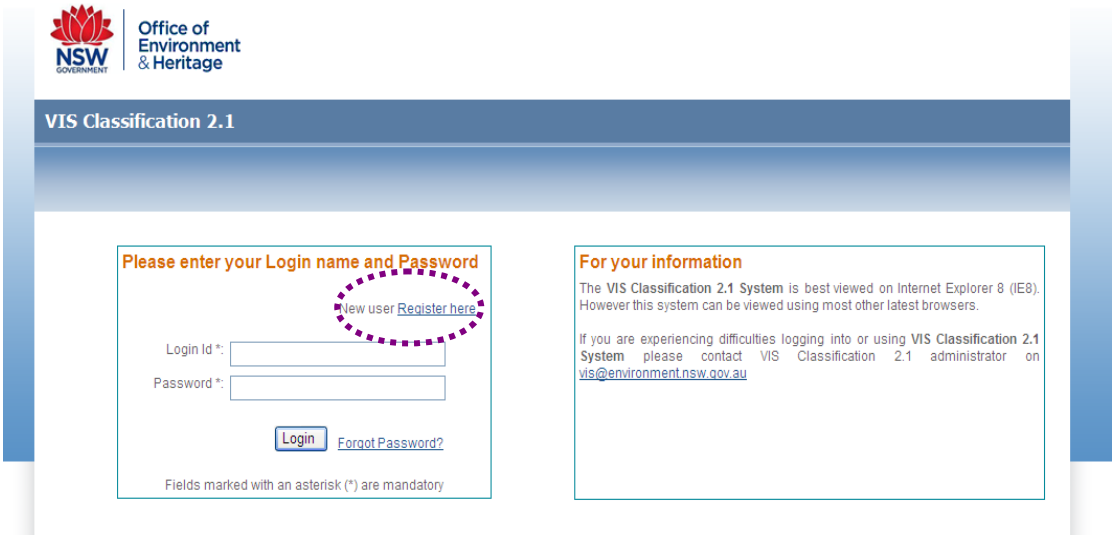
Option 2:



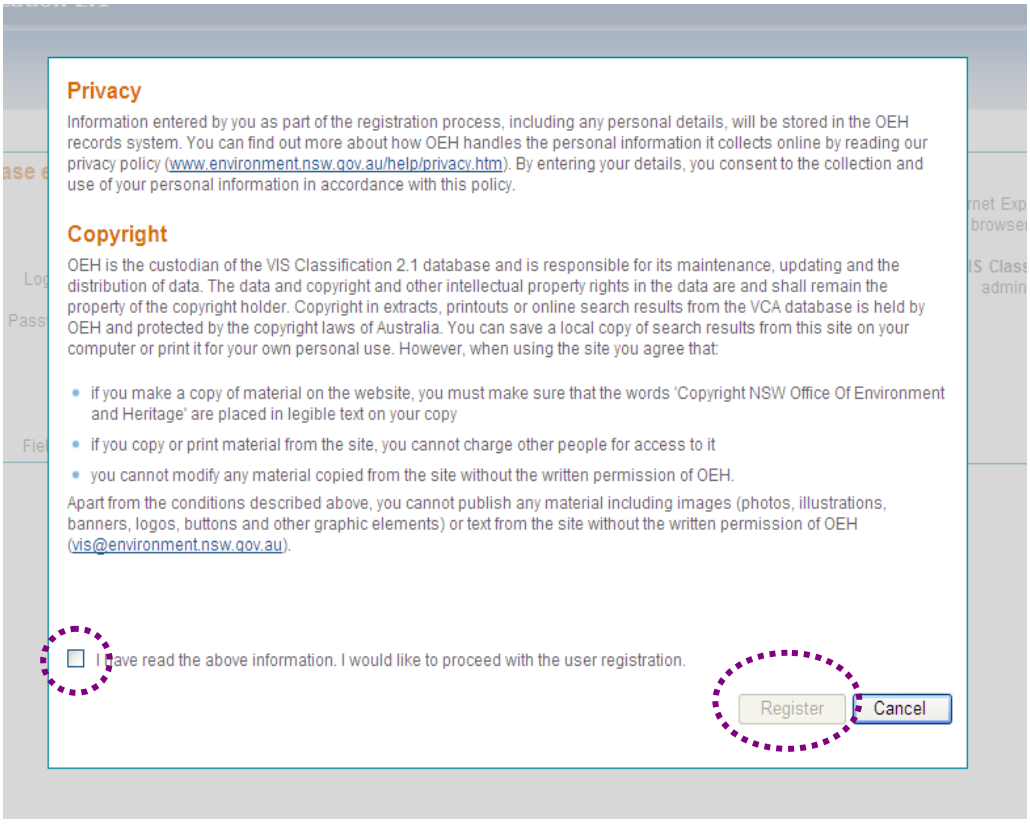
4. Registering as a Public User

To register to use the VIS Classification, follow the link to the NSW VIS Classification Public User Registration page (http://www.environment.nsw.gov.au/NSWVCA20PRapp/LoginPR.aspx).

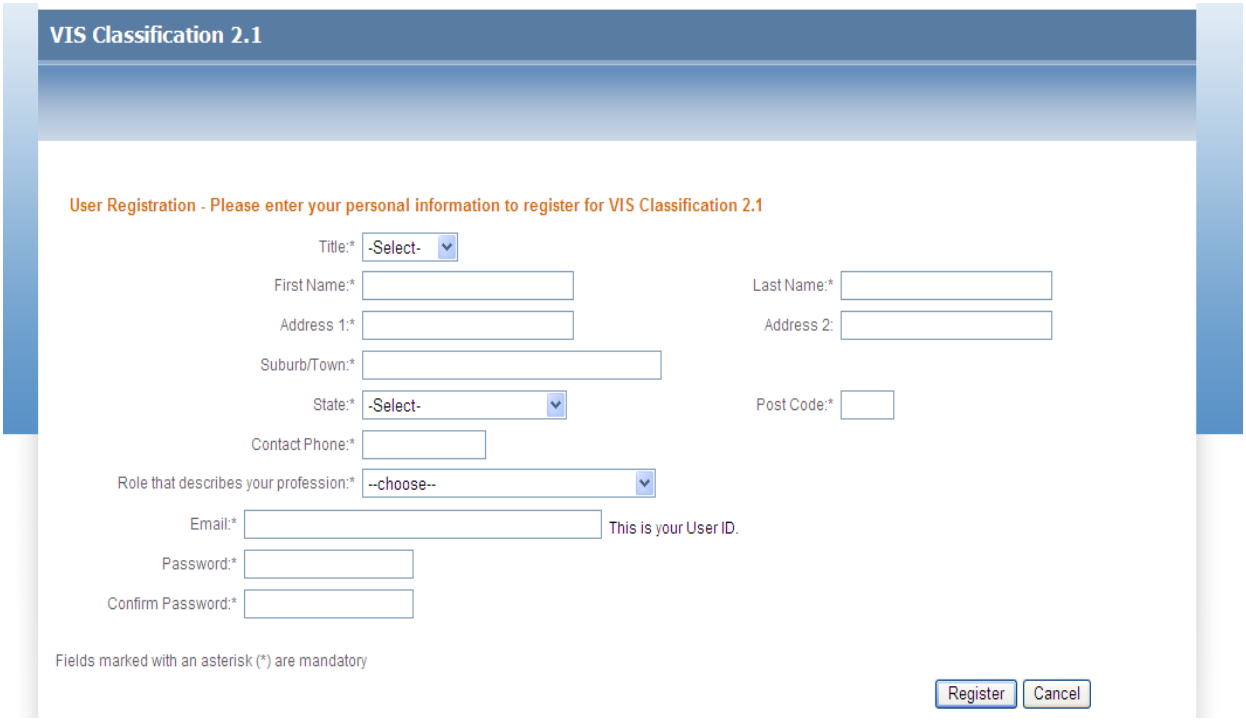
This will open the page shown below.



Click on New user **Register here** hyper-link text to open the new user registration page. The Conditions of Use screen will appear:



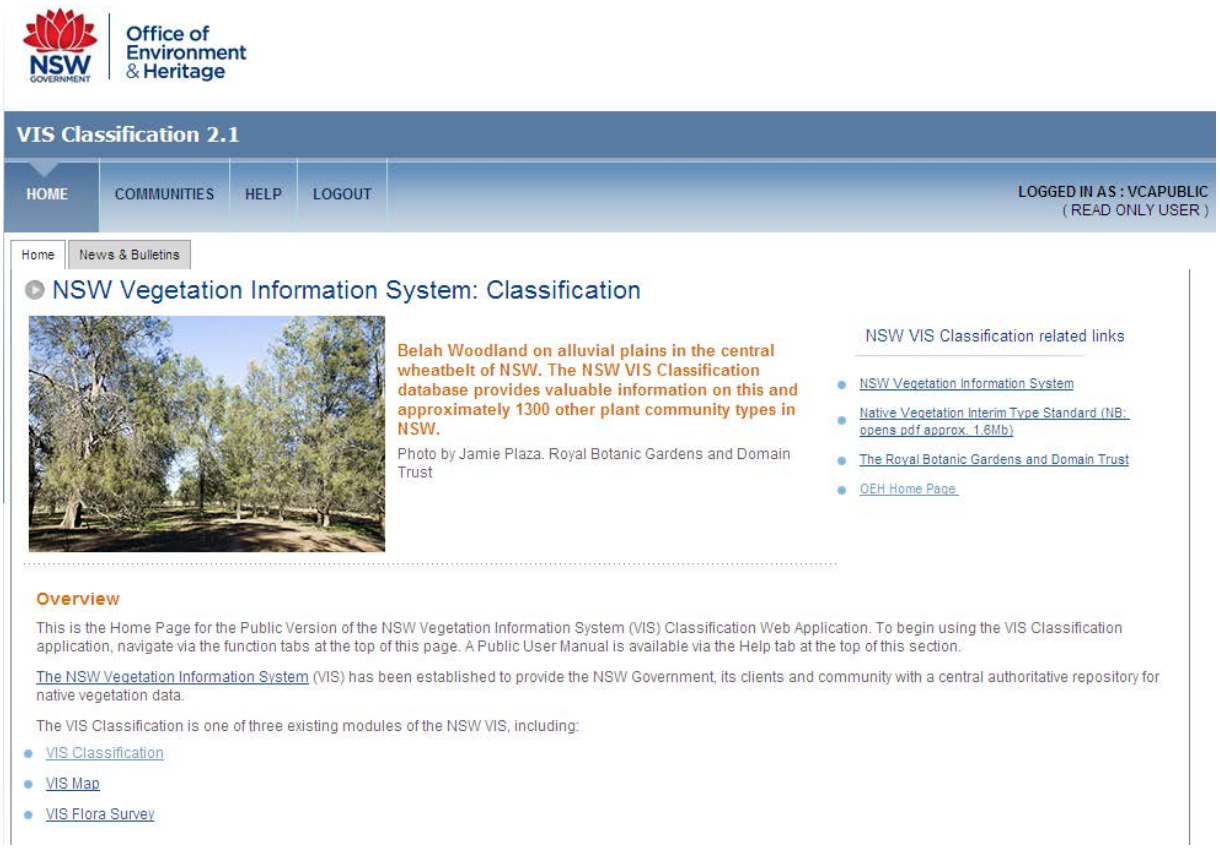
Please read the conditions, then click to accept the conditions if you wish to proceed. The **Register** button will now become active; click to open the registration screen, as shown below.



Fill in the required details as indicated for each field. Please note that no spaces are allowed in the phone number field.

Please note that you will not be able to change your password once it is registered, so please ensure you will be able to recall your password when needed. If you forget your password, a retrieve password link is provided on the log in page.

Once you are registered in the system you will be automatically directed to the VIS Classification Home Page.



You will also receive an email (to the email address you provided) noting your registration and with details of your user name and password. Please keep a copy of this email for future reference.

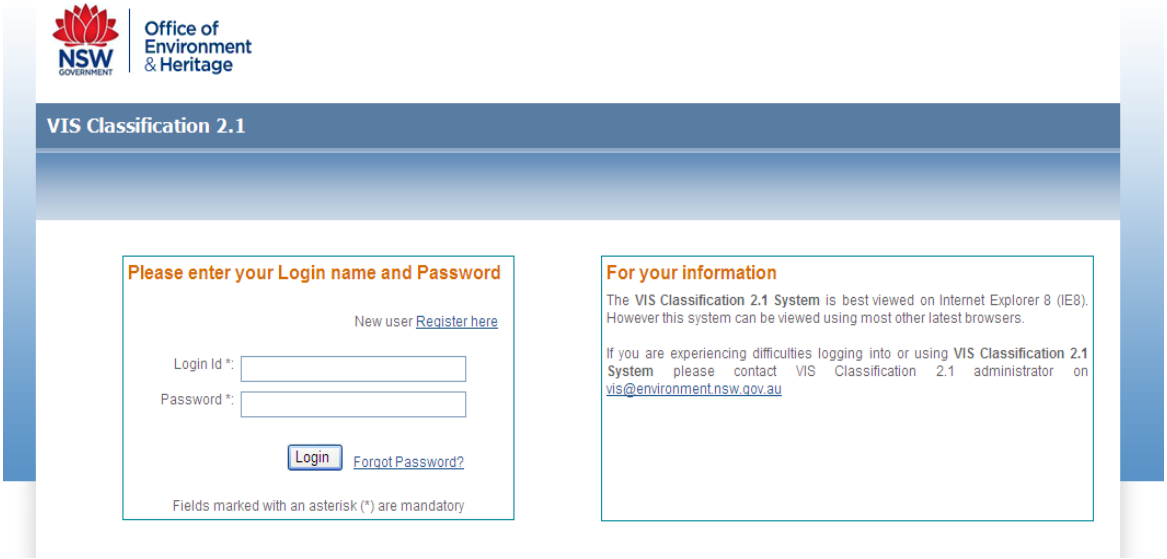
Please take normal security measures with regard to your user name and password.

5. Opening the Database: Home Page

To open the VIS Classification application, you will need to log into the system via the link below:

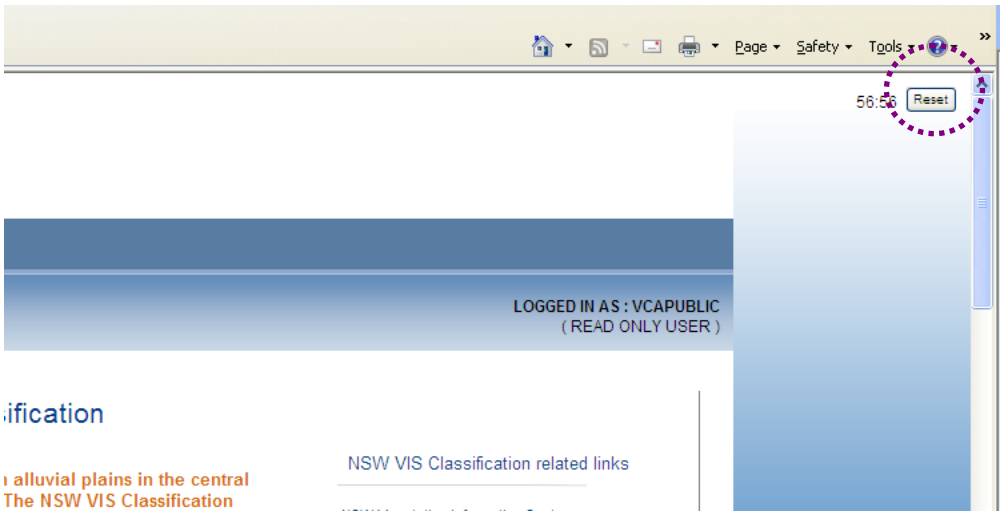
http://www.environment.nsw.gov.au/NSWVCA20PRapp/LoginPR.aspx

This opens the log in screen shown below.

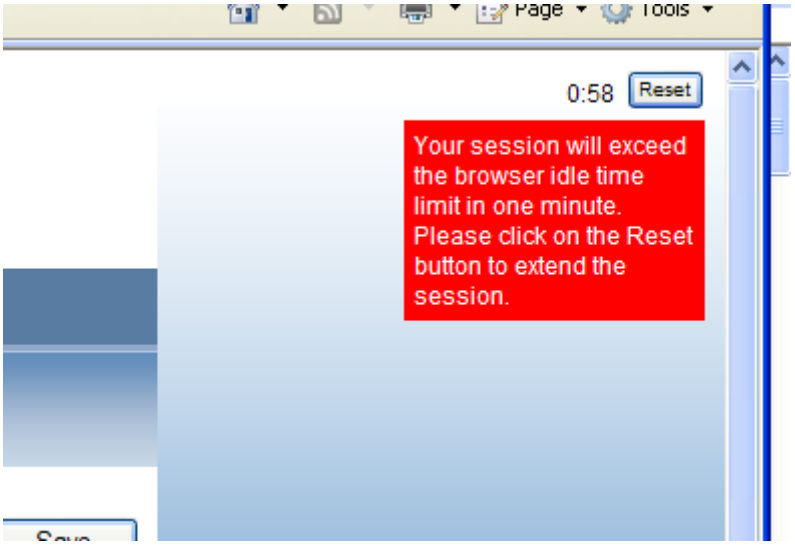


Please enter your network log in user name and password (see Section 3 Possible Technical Issues, above), then click the '**login'** button to open the NSW Vegetation Information System Classification Home Page.

While you are on the Home Page, please note the time counter at the top right hand corner of the screen, as indicated below.



This counts down from 60 minutes to zero – this is the amount of time remaining before the system will log you off if there has been no page activity. When the counter gets down to less than 1 minute, the warning message below will appear:

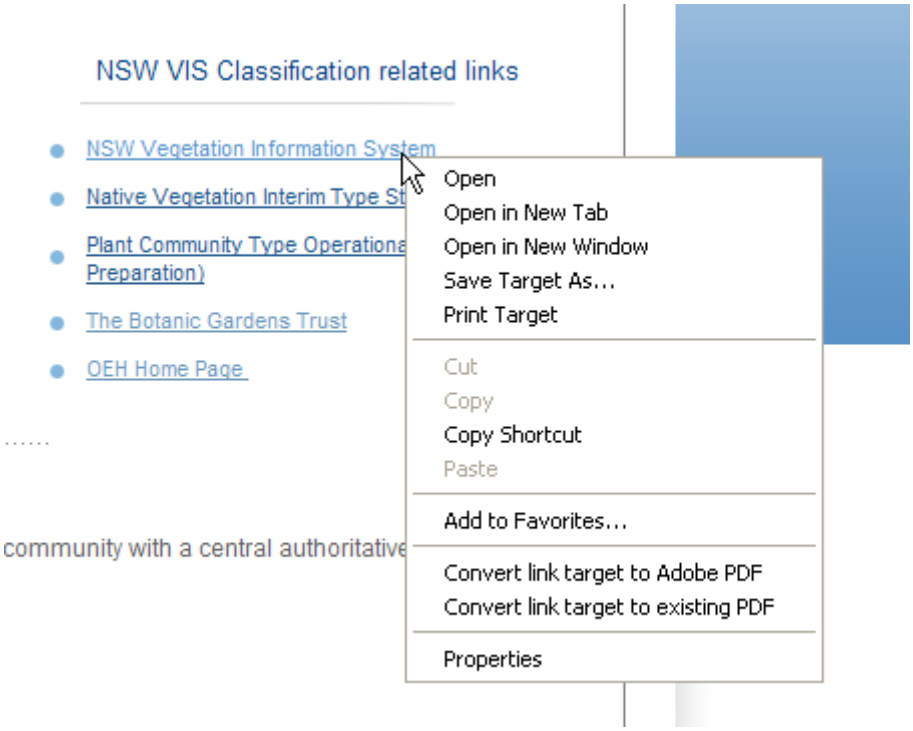


This counter will reset whenever you activate anything on a page or move across pages. You can also reset the time by clicking the '**Reset'** button which will set the timer back to 60 minutes.

5.1 Links to Other Information

On the top right of the Home Page there are a number of links that provide further background or related information, as shown below.

Please note, however, that these will navigate you away from the VIS Classification Home Page. You can choose to open the new links in either a new tab on your browser, or in a new browser page, by right clicking on the relevant link. This opens the drop down menu as shown below.

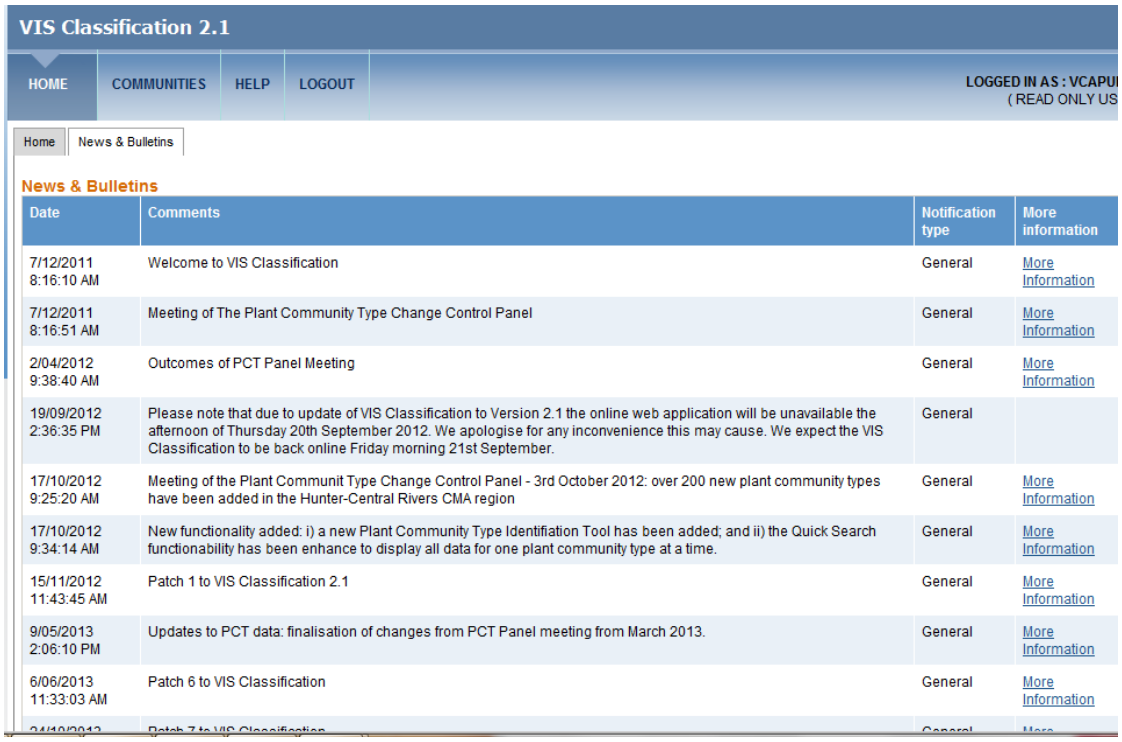


Simply select the option for how you want the new link page to open by clicking on that option in the list.

5.2 News & Bulletins

From the home page, click on the '**News & Bulletins**' tab, as shown below.

This will open the list of topics currently listed as News and Bulletins, as shown below.



Date	Comments	Notification type	More information
7/12/2011 8:16:10 AM	Welcome to VIS Classification	General	More Information
7/12/2011 8:16:51 AM	Meeting of The Plant Community Type Change Control Panel	General	More Information
2/04/2012 9:38:40 AM	Outcomes of PCT Panel Meeting	General	More Information
19/09/2012 2:36:35 PM	Please note that due to update of VIS Classification to Version 2.1 the online web application will be unavailable the afternoon of Thursday 20th September 2012. We apologise for any inconvenience this may cause. We expect the VIS Classification to be back online Friday morning 21st September.	General	
17/10/2012 9:25:20 AM	Meeting of the Plant Communit Type Change Control Panel - 3rd October 2012: over 200 new plant community types have been added in the Hunter-Central Rivers CMA region	General	More Information
17/10/2012 9:34:14 AM	New functionality added: i) a new Plant Community Type Identifiation Tool has been added; and ii) the Quick Search functionability has been enhance to display all data for one plant community type at a time.	General	More Information
15/11/2012 11:43:45 AM	Patch 1 to VIS Classification 2.1	General	More Information
9/05/2013 2:06:10 PM	Updates to PCT data: finalisation of changes from PCT Panel meeting from March 2013.	General	More Information
6/06/2013 11:33:03 AM	Patch 6 to VIS Classification	General	More Information

This area provides summaries of any important notifications and alerts in relation to major changes to plant community types or the database itself, including decisions by the Plant Community Type Change Control Panel and general information of system changes. Links may be provided to further information.

6.0 Accessing Data

There are three main ways of accessing the data in the VIS Classification, namely via:

- Search and Display PCT
- Plant Community Type Identification Tool
- Reports and Exports

The **Search and Display PCT** function is primarily aimed at getting access to all data for one plant community type at a time, and being able to view all the data for all the fields. This provides the maximum retrieval of data, but the search must be re-done for each plant community type for which you want to see information. Use this for in-depth understanding of one particular plant community type. How to use this function is described in detail in Section 7.0 Search and Display PCT and Display PCT, below.

The **Plant Community Type Identification Tool** provides a way to search and retrieve summary information on a range of plant community types by creating and running a series of queries. The results – or matches – against those criteria are then listed in a table, or grid, format and further refinement of the results can be undertaken by filtering the results table of matching plant community types. This is a more interactive way to identify a range of plant community types and to obtain a quick overview of the main data that defines or describes that

plant community type (e.g. vegetation structure, species composition, etc). Instructions for using this tool are provided in Section 8.0 Plant Community Identification Tool, below.

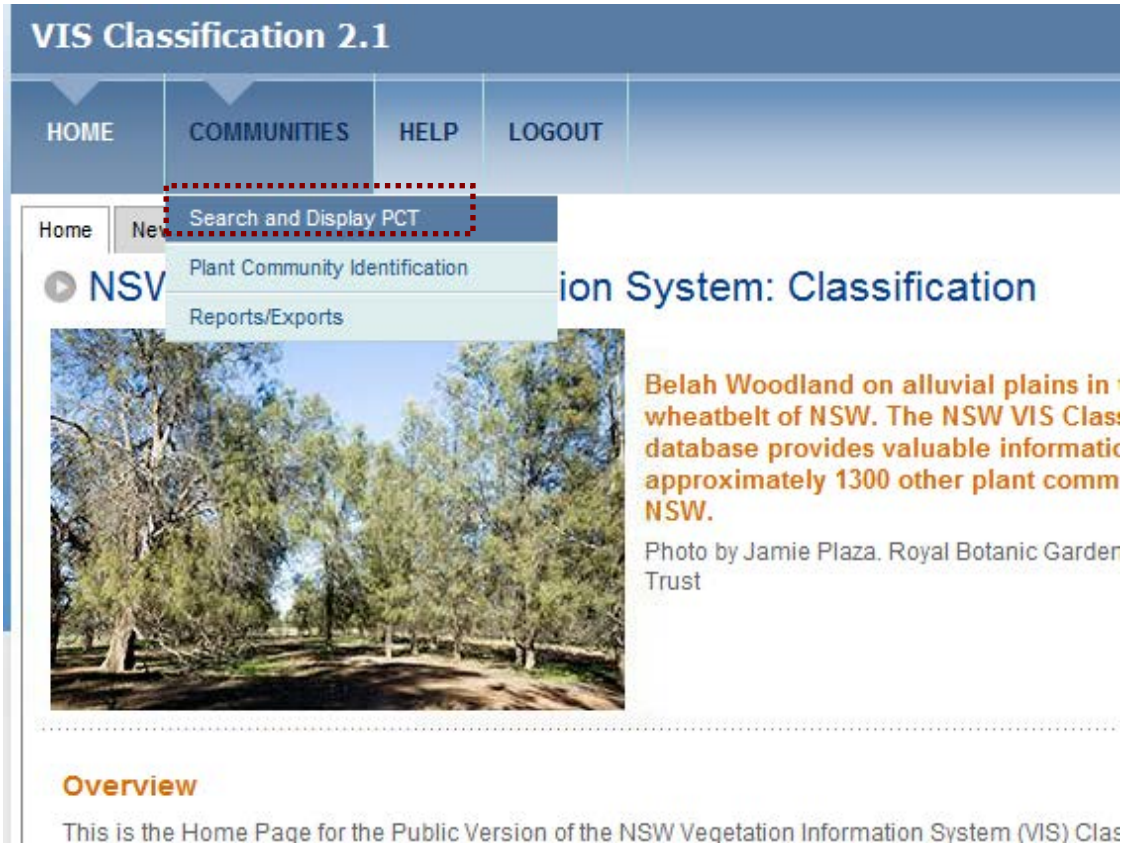
The Plant Community Type Identification Tool is also available as an independent software and data package that can be downloaded and installed on your PC or laptop. Further information on the off-line version of the PCT Identification Tool can be found on the Plant Community Identification Software page: (http://www.environment.nsw.gov.au/research/PlantCommunityIDsoftware.htm).

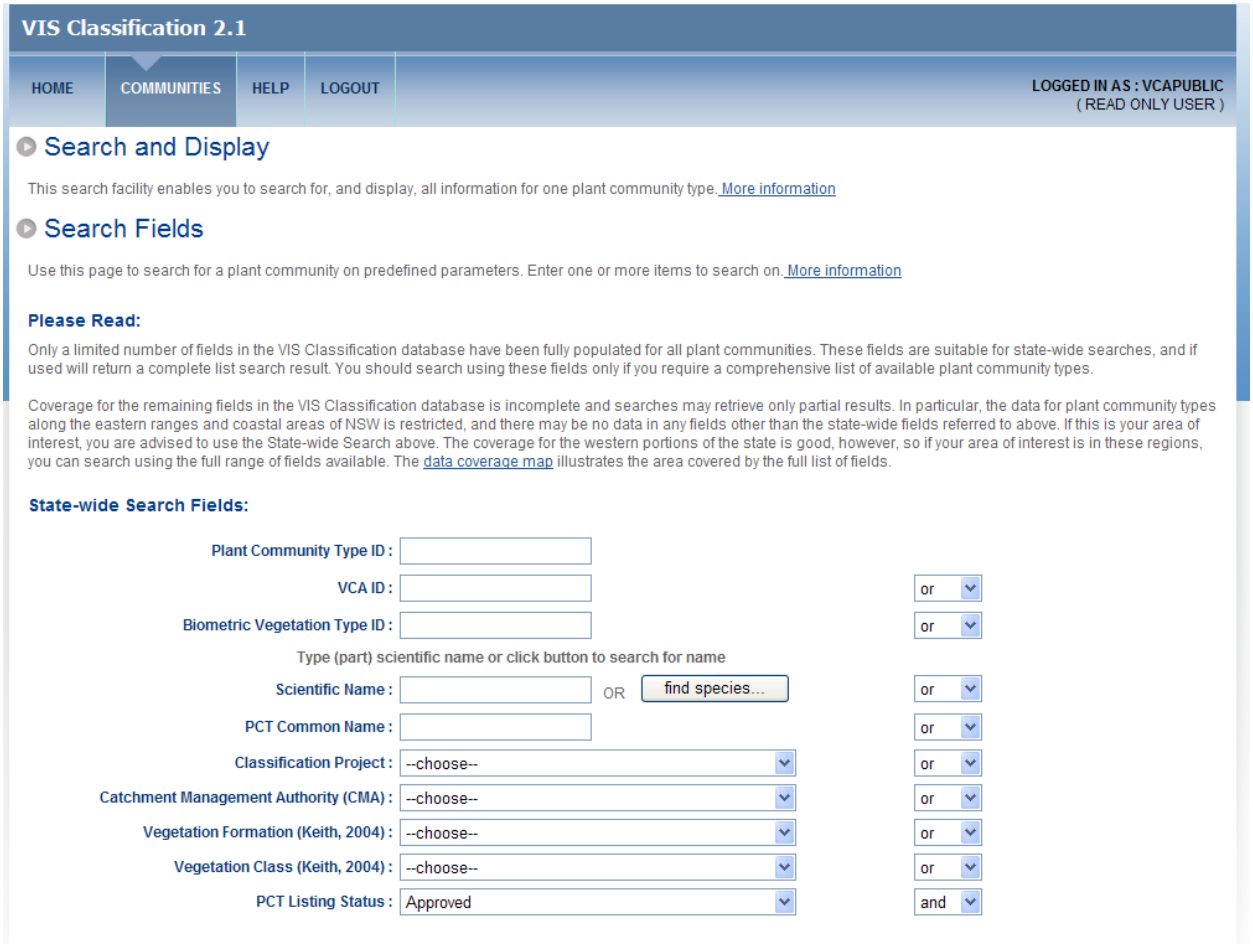
To produce data as exports (e.g. to use in spreadsheets) or in report format (word and pdf documents) then use the **Reports/Exports** functions. This will guide you through the creation of queries to retrieve the data you need for one or many plant community types, or even retrieve data for all the plant community types in the database. If you are after information for a particular vegetation class or within a particular area, e.g. Catchment Management Authority and want to be able to view and use the information outside the VIS system, then see details in Section 9.0 Reports and Exports, below.

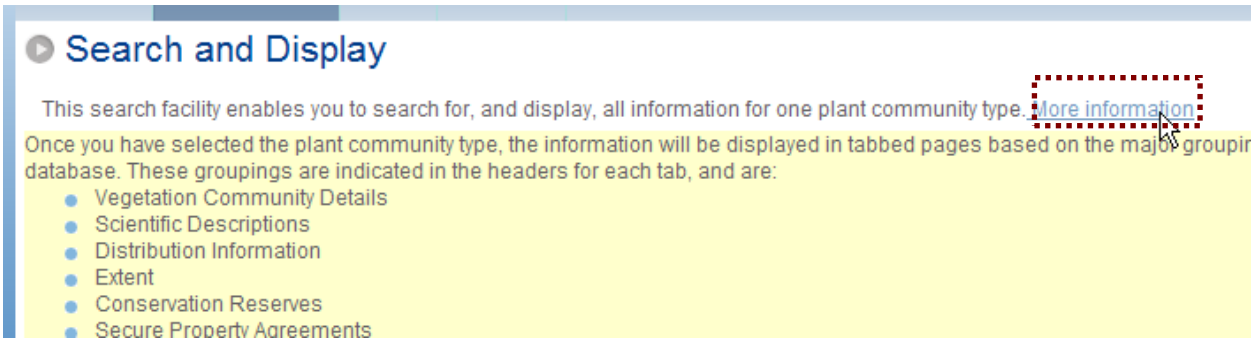
The following three sections provide details on how to use each of these functions.

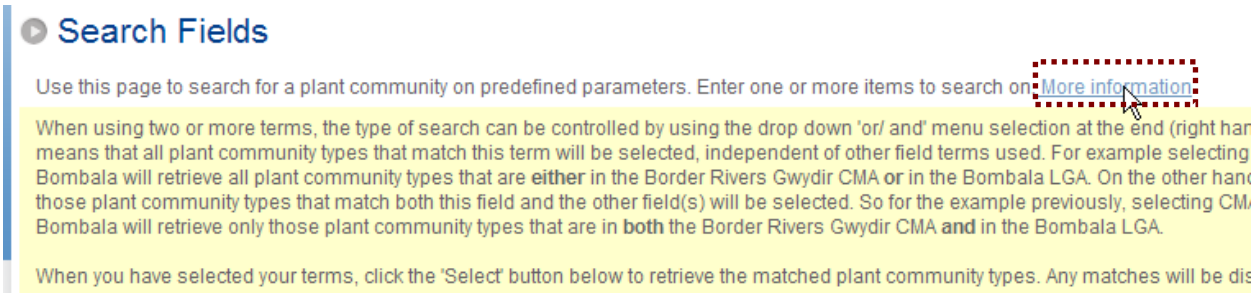
7.0 Search and Display PCT

Access this function by clicking on the **Search and Display PCT** item in the Communities drop down menu, as shown below.




VIS Classification 2.1
HOME
COMMUNITIES
HELP
LOGOUT
LOGGED IN AS : VCAPUBLIC
(READ ONLY USER)
Search and Display
This search facility enables you to search for, and display, all information for one plant community type. More information
Search Fields
Use this page to search for a plant community on predefined parameters. Enter one or more items to search on. More information
Please Read:
Only a limited number of fields in the VIS Classification database have been fully populated for all plant communities. These fields are suitable for state-wide searches, and if used will return a complete list search result. You should search using these fields only if you require a comprehensive list of available plant community types.
Coverage for the remaining fields in the VIS Classification database is incomplete and searches may retrieve only partial results. In particular, the data for plant community types along the eastern ranges and coastal areas of NSW is restricted, and there may be no data in any fields other than the state-wide fields referred to above. If this is your area of interest, you are advised to use the State-wide Search above. The coverage for the western portions of the state is good, however, so if your area of interest is in these regions, you can search using the full range of fields available. The data coverage map illustrates the area covered by the full list of fields.
State-wide Search Fields:
Plant Community Type ID :
VCA ID :
Biometric Vegetation Type ID :
Type (part) scientific name or click button to search for name
Scientific Name :
OR
find species...
PCT Common Name :
Classification Project : --choose--
Catchment Management Authority (CMA) : --choose--
Vegetation Formation (Keith, 2004) : --choose--
Vegetation Class (Keith, 2004) : --choose--
PCT Listing Status : Approved
or
and


Search and Display
This search facility enables you to search for, and display, all information for one plant community type. More information
Once you have selected the plant community type, the information will be displayed in tabbed pages based on the majo groupir
database. These groupings are indicated in the headers for each tab, and are:
Vegetation Community Details
Scientific Descriptions
Distribution Information
Extent
Conservation Reserves
Secure Property Agreements


Search Fields
Use this page to search for a plant community on predefined parameters. Enter one or more items to search on. More information
When using two or more terms, the type of search can be controlled by using the drop down 'or/ and' menu selection at the end (right han
means that all plant community types that match this term will be selected, independent of other field terms used. For example selecting
Bombala will retrieve all plant community types that are either in the Border Rivers Gwydir CMA or in the Bombala LGA. On the other hand
those plant community types that match both this field and the other field(s) will be selected. So for the example previously, selecting CMA
Bombala will retrieve only those plant community types that are in both the Border Rivers Gwydir CMA and in the Bombala LGA.
When you have selected your terms, click the 'Select' button below to retrieve the matched plant community types. Any matches will be dis

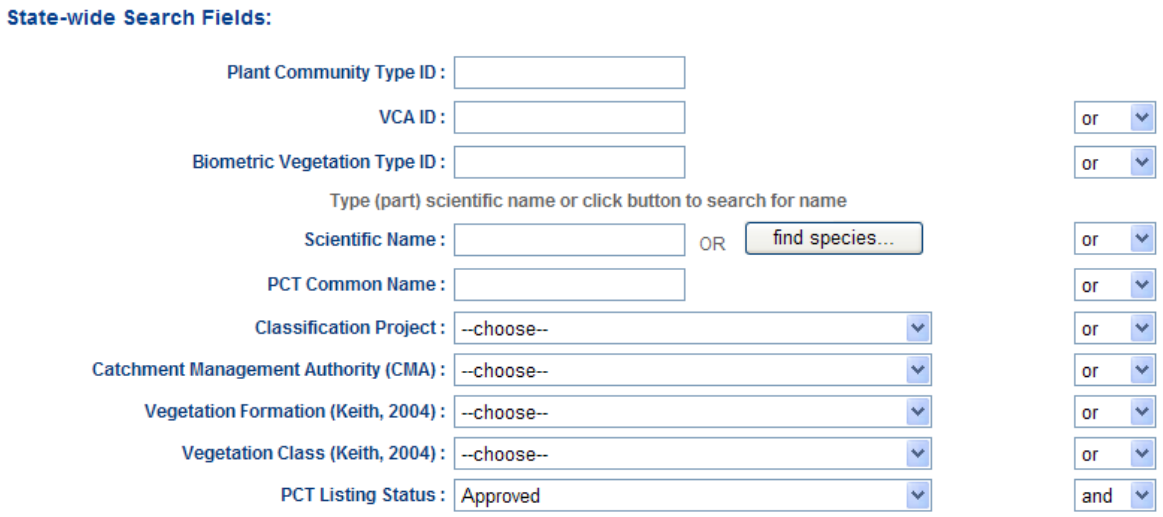
N.B. (PLEASE READ)

Only a limited number of fields in the VIS Classification database have been fully populated for all plant communities. These fields are displayed in the top half of the Search screen under the heading '**State-wide Search Fields**'. These fields are suitable for state-wide searches and if used will return a complete list search result for those fields. You should search using these fields if you require a comprehensive list of available plant community types across the state.

Coverage for the remaining fields in the VIS Classification database is incomplete and searches may retrieve only partial results. In particular the data for plant community types along the eastern ranges and coastal areas of NSW is restricted and there may be no data in any fields other than the state-wide fields referred to above. These fields are displayed in the bottom half of the Search screen under the **heading Additional Fields: (N.B.: may retrieve only partial results if included).**

Further information is provided via the More Information links, as described above, and in Section 9.1 Options for Searches (Exports and Reports) below.

The fields for the State-wide search are either text fields (the first five fields) or drop down menu fields (the bottom five fields), as shown below.



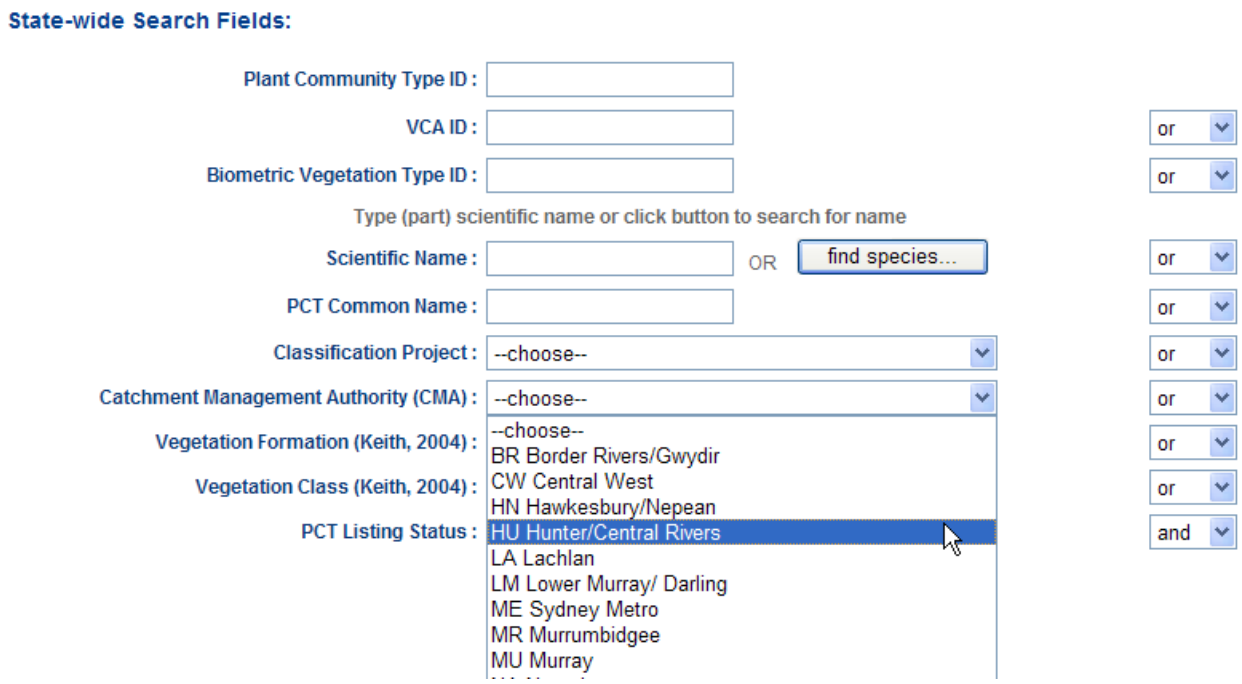
For the text fields, simply type in the terms or partial terms (words/ characters) and hit the **Enter** key on your keyboard, or the **Search** button at the bottom of the screen. The system will display the results in the area below the search fields at the bottom of the page as shown below.

Search results

Plant community ID	common name (community)	scientific name (taxon)	
2	River Red Gum-sedge dominated very tall open forest in frequently flooded forest wetland along major rivers and floodplains in south-western NSW	Eucalyptus camaldulensis subsp. camaldulensis / / Eleocharis acuta , Centipeda cunninghamii , Ranunculus inundatus , Pseudoraphis spinescens	View
5	River Red Gum herbaceous-grassy very tall open forest wetland on inner floodplains in the lower slopes sub-region of the NSW South Western Slopes Bioregion and the eastern Riverina Bioregion.	Eucalyptus camaldulensis subsp. camaldulensis / Acacia dealbata / Bothriochloa macra , Carex tereticaulis , Lachnagrostis filiformis , Hemarthria uncinata var. uncinata	View
7	River Red Gum - Warrego Grass - herbaceous riparian tall open forest wetland mainly in the Riverina Bioregion	Eucalyptus camaldulensis subsp. camaldulensis / Paspalidium jubiflorum , Wahlenbergia fluminalis , Senecio quadridentatus , Carex tereticaulis /	View
8	River Red Gum - Warrego Grass - Couch Grass riparian tall woodland wetland of the semi-arid (warm) climate zone (Riverina Bioregion and Murray Darling Depression Bioregion)	Eucalyptus camaldulensis subsp. camaldulensis / Paspalidium jubiflorum , Cynodon dactylon , Wahlenbergia fluminalis , Centipeda cunninghamii /	View
9	River Red Gum - wallaby grass tall woodland wetland on the outer River Red Gum zone mainly in the Riverina Bioregion	Eucalyptus camaldulensis subsp. camaldulensis / / Austrodanthonia caespitosa , Juncus flavidus , Carex inversa	View
10	River Red Gum - Black Box woodland wetland of the semi-arid (warm) climatic zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Eucalyptus camaldulensis subsp. camaldulensis , Eucalyptus largiflorens / Muehlenbeckia florulenta / Cyperus exaltatus , Paspalidium jubiflorum , Oxalis perennans	View
11	River Red Gum - Lignum very tall open forest or woodland wetland on floodplains of semi-arid (warm) climate zone (mainly Riverina Bioregion and Murray Darling Depression Bioregion)	Eucalyptus camaldulensis subsp. camaldulensis / Acacia stenophylla , Muehlenbeckia florulenta / Paspalidium jubiflorum , Cyperus gymnocaulos , Einadia nutans subsp. nutans	View
36	River Red Gum tall to very tall open forest / woodland wetland on rivers on floodplains mainly in the Darling Riverine Plains Bioregion	Eucalyptus camaldulensis subsp. camaldulensis / Acacia stenophylla , Acacia salicina , Muehlenbeckia florulenta / Paspalidium jubiflorum , Eleocharis plana , Rumex brownii , Einadia nutans subsp. nutans	View
41	River Red Gum open woodland wetland of intermittent watercourses mainly of the arid climate zone	Eucalyptus coolabah subsp. arida , Eucalyptus coolabah / Myoporum montanum , Rhagodia spinescens , Acacia salicina / Tetragonia eremaea , Enneapogon avenaceus , Eragrostis dielsii , Enchylaena tomentosa	View
42	River Red Gum / River Oak riparian woodland wetland in the Hunter Valley	Eucalyptus camaldulensis / Austrostipa verticillata / Austrodanthonia spp. , Cynodon dactylon , Einadia trigonos , Enchylaena tomentosa	View

1 2 3 4 5 6 7 8 9 10 ...

To use one of the drop down fields, simply click the drop down arrow next to the relevant field, then click to select the entry you want, as shown below.

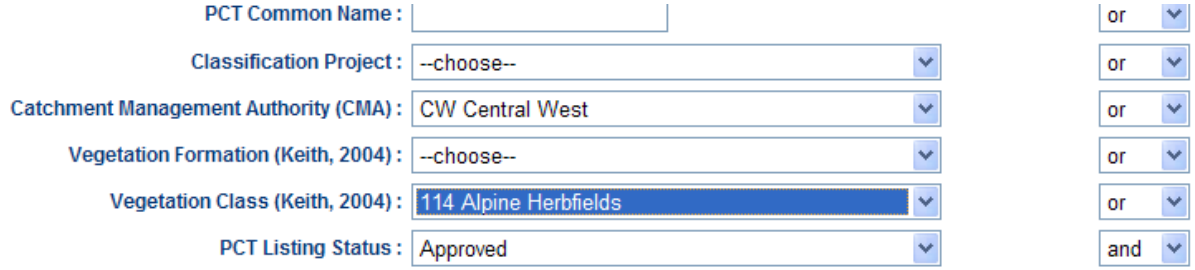


Hit the **Enter** key on your keyboard, or the **Search** button at the bottom of the screen. The system will display the results in the area below the search fields at the bottom of the page as shown previously.

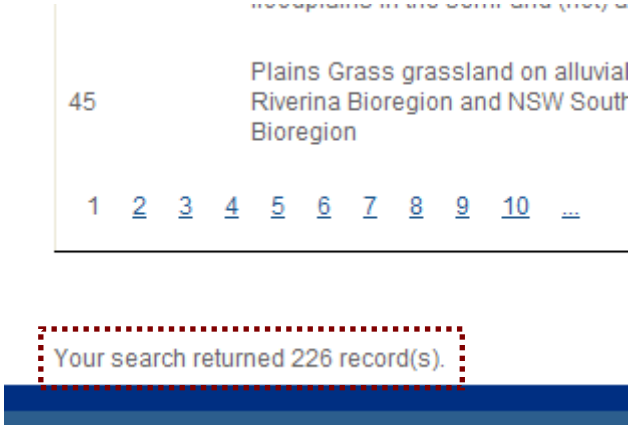
If you want to create a search using more than one term, either type in the terms, or partial terms, into the type in fields, and select the relevant entries via the drop down fields. When you have completed entering your terms, hit the **Enter** key on your keyboard, or the **Search** button at the bottom of the screen and the system will display the results in the area below the search fields at the bottom of the page as shown previously. You can modify and of the terms to refine your search at any time. To clear all the terms in the fields and the list of matched results, click the **Clear** button at the bottom.

When you are using multiple fields to create your search, you can specify how you want the terms to interact. Basically this means setting a condition whereby the terms must ALL be met, or where ANY of the terms are met. These two types of interactions are chosen via the drop down fields to the right of the relevant field, as shown below.

As an example, selecting Alpine Herbfields from the Vegetation Class (Keith 2004) field then selecting CW Central West from the Catchment Management Authority field and leaving the interaction term as the default ‘or’ – as shown below - will retrieve a list of all PCTs that are either in the Central West CMA or are defined as within the Alpine Herbfields Vegetation Class.

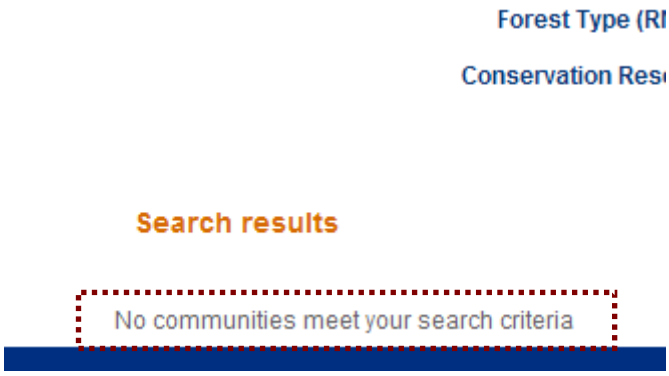


The results will be listed below, and the number of matches indicated in the text under the list, as shown below.



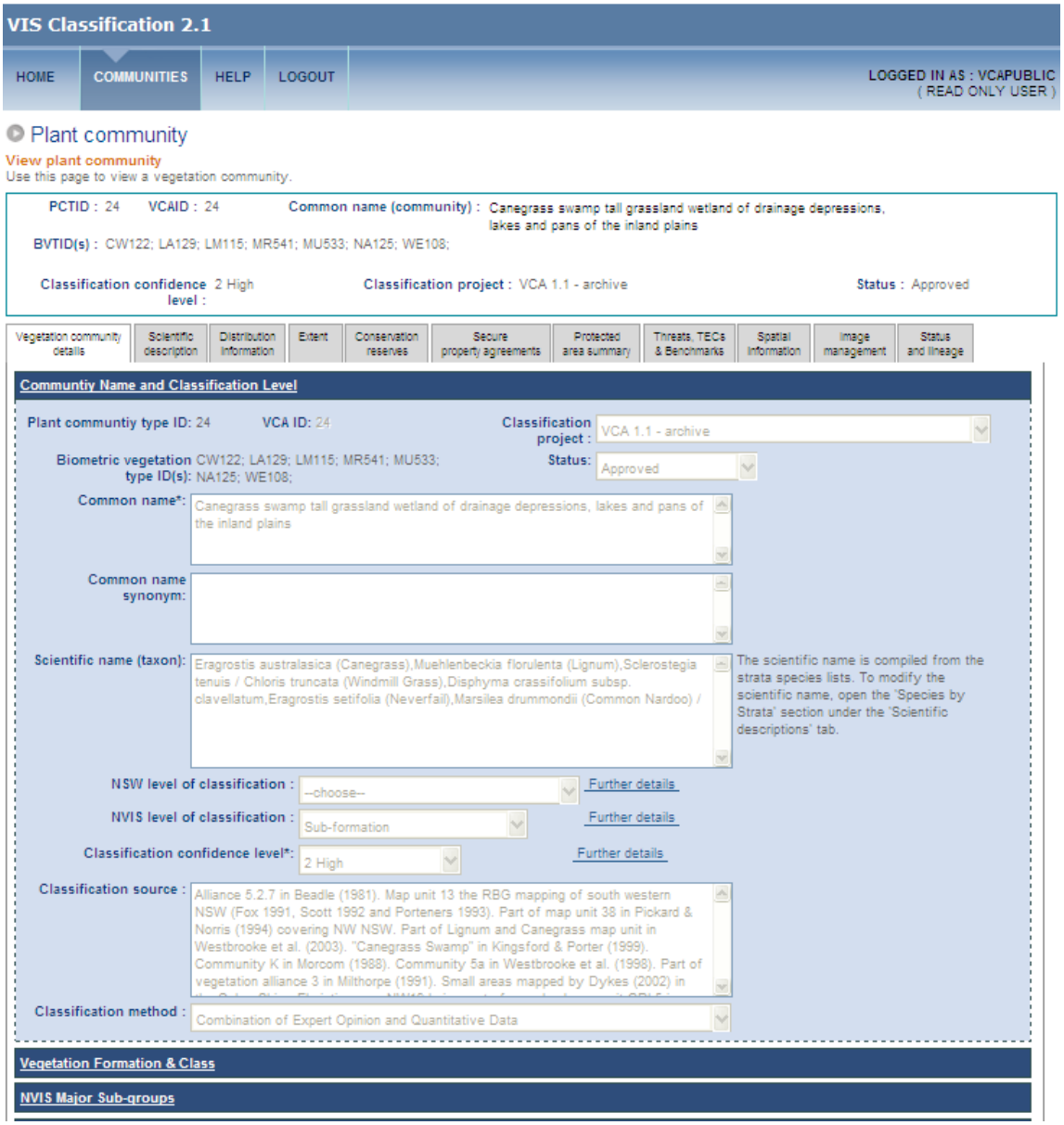
However, altering the interaction term for the second criteria, i.e. the Vegetation Class, to 'and' – as shown below - will alter the search so that the system will retrieve plant community types that are both in the Central West CMA AND are also in the Alpine Herbfields Vegetation Class.

In this instance, no results will be retrieved as (unsurprisingly) there are no Alpine Herbfields in the Central West CMA. The fact that no matches were found will be indicated at the bottom of the (now empty) Search results section, as shown below.

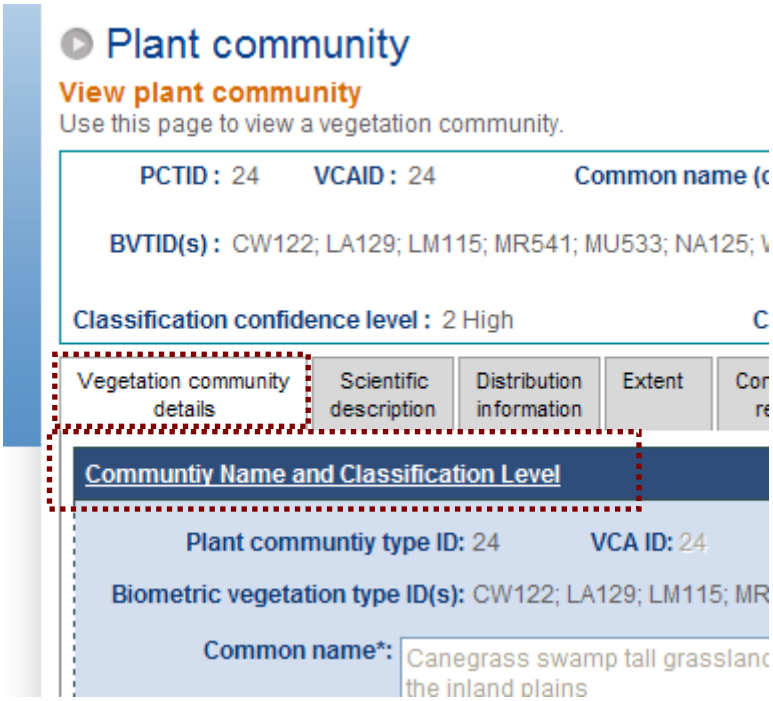


When you want to view the data for the (or one of the) plant community types listed in the Search results, click the View button to the right of the relevant plant community type name, as shown below.

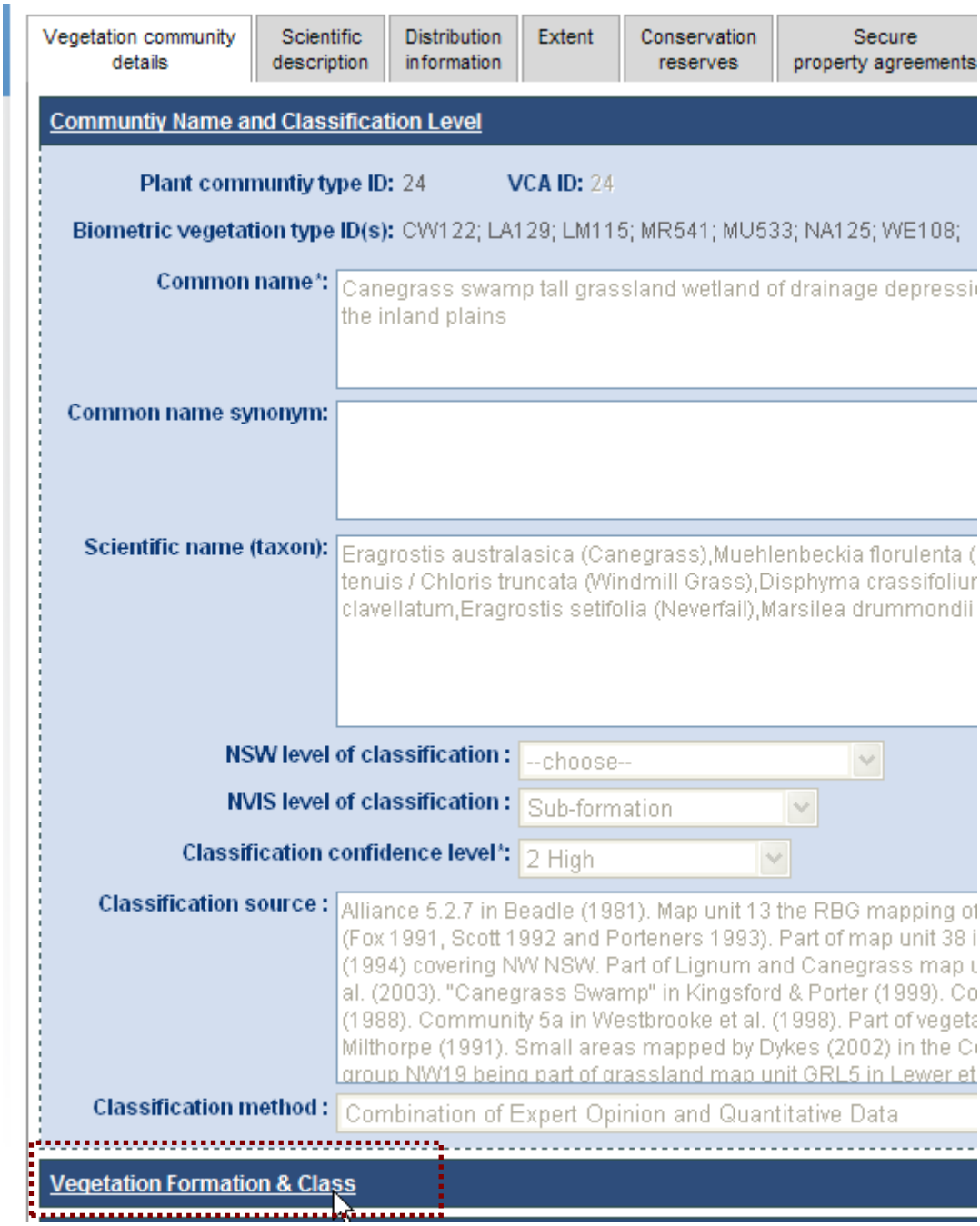
This will retrieve for display all of the data held for that plant community type. Please note that there are over 200 fields to be retrieved and displayed so it may take some time for the system to finish the retrieval. When the data are retrieved, the VIS Classification tabbed display will appear with the data for that plant community type in the relevant fields, as shown below.



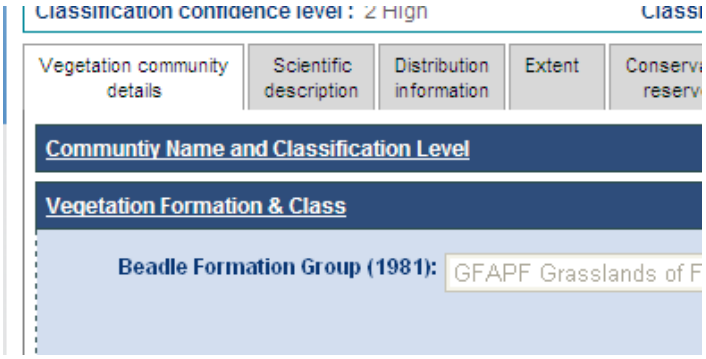
The data are organised into major areas as indicated by the titled tabs – by default the screen will appear with the vegetation community details tab active, i.e. open. For each tab, data are furthered organised in sections within that tab, as indicated by the blue bars with white text that describes that section – by default the Community Name and Classification level section is open, as shown below.



The Section header bars operate as accordions, i.e. click to open one while automatically closing the currently open one. So clicking on the Vegetation Formation and Class section heading, as shown below…

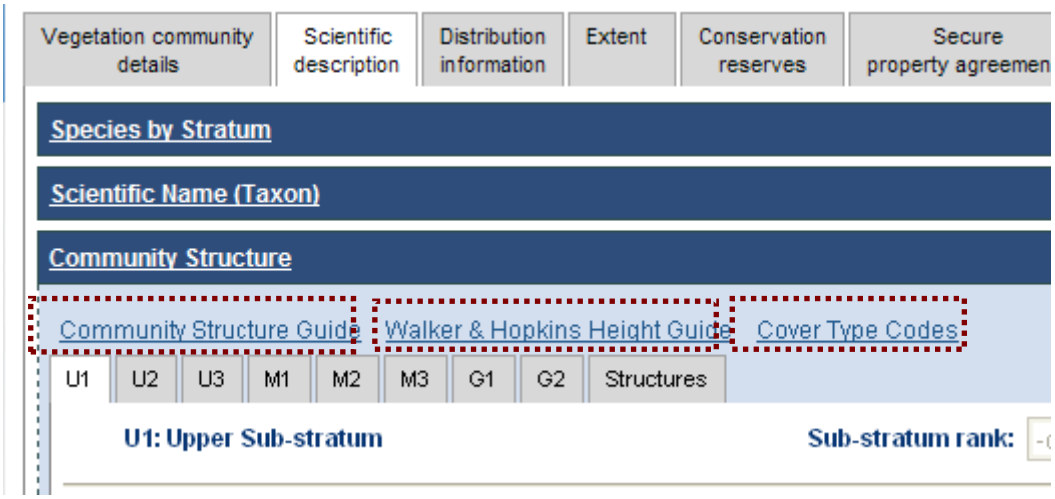


… will open the Vegetation Formation and Class section while automatically closing the Community Name and Classification Level section, as shown below.



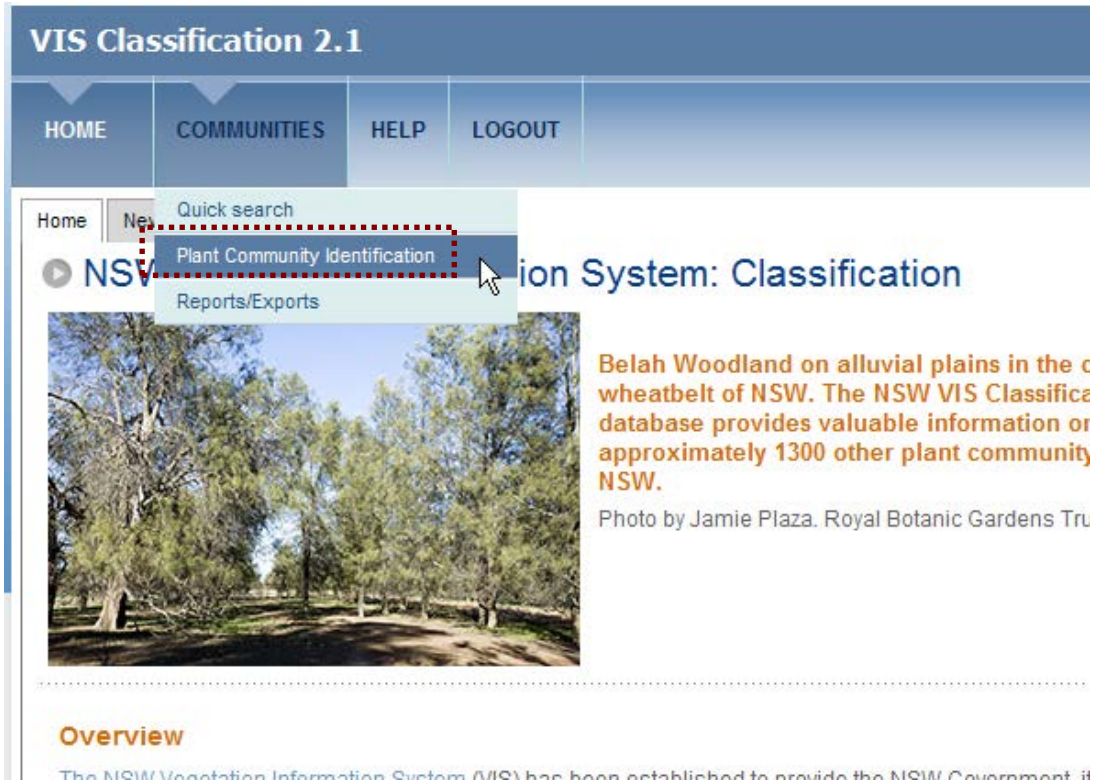
To navigate through the information, click on the major tabs to open a major data group area, then use the section headings to open and close the relevant information.

In a number of places there are links that will provide further information on various aspects of the data displayed. For example, as shown below, in the Community Structure section within the 'Scientific description' area, the three text links will open three different pdf documents providing details on the community structure information provided.

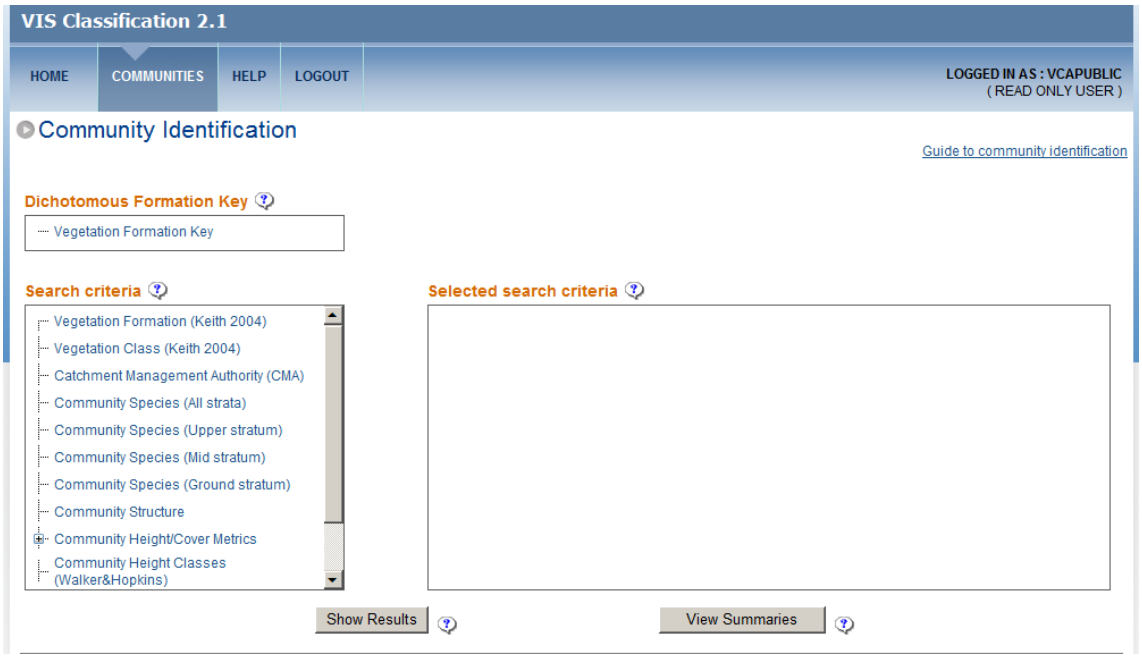


8.0 Plant Community Type Identification Tool

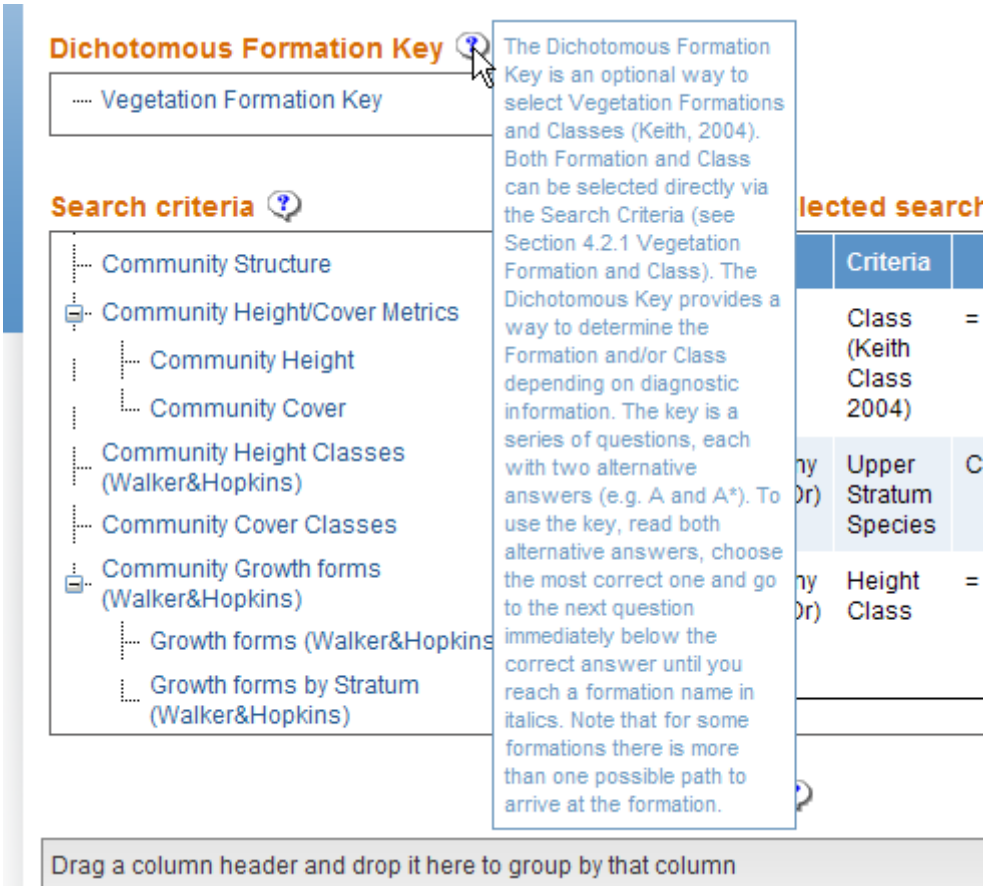
Click on the Plant Community Identification item in the Communities drop down menu as shown below.



This will open the main PCT Id Tool page as shown below.



Please note that background information is available for the various sections via the '**?**' icons; just click the relevant icon to get a pop-up screen for that section, as shown below.



Click anywhere (other than another '**?**' icon!) to make the pop up go away.

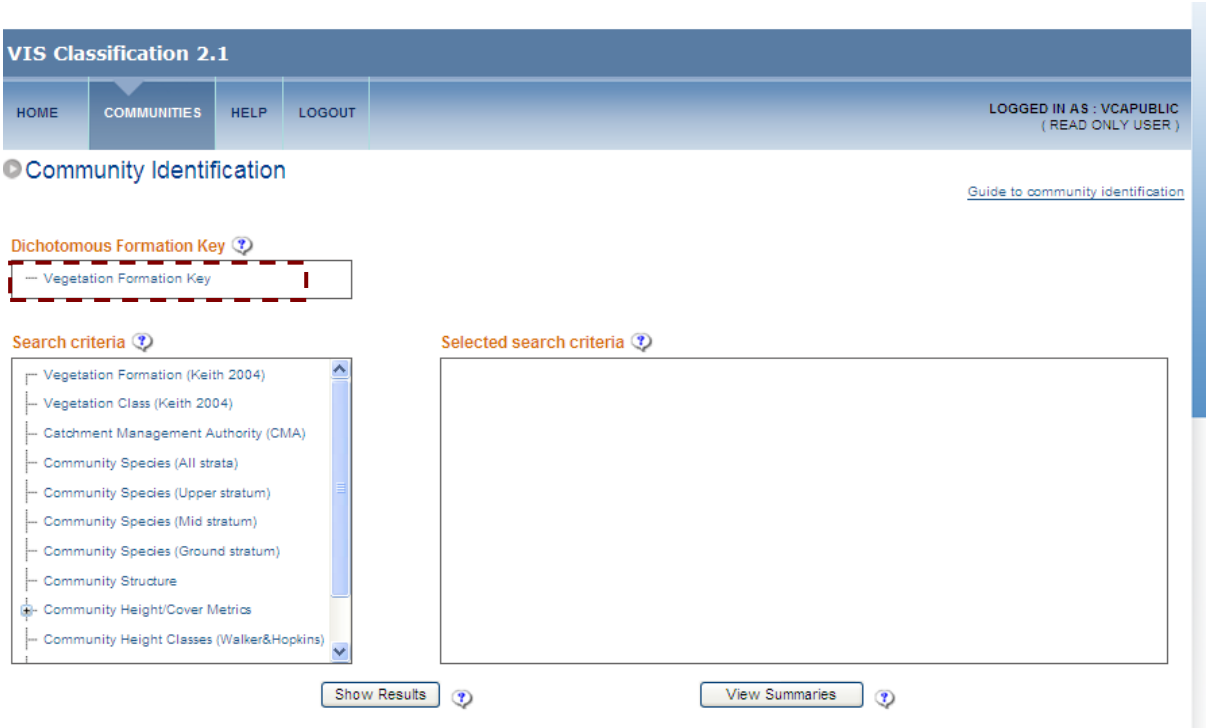
The PCT Id Tool allows you to build a set of search criteria and then display the results that match your criteria, and to modify the criteria and to view summary information on selected communities. You can also then export your matched results as csv or word files.

8.1 Dichotomous Formation Key

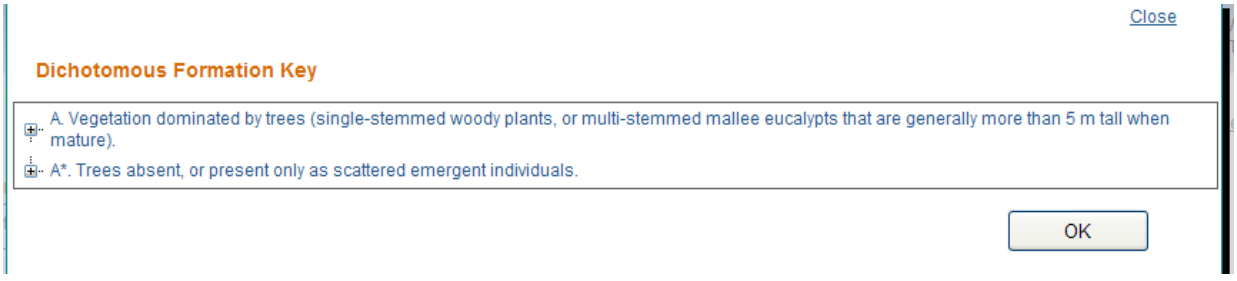
The Dichotomous Formation Key is an optional way to select Vegetation Formations and Classes (Keith, 2004). Both Formation and Class may also be selected directly via the Search Criteria (see Section 8.2.1 Vegetation Formation and Class). The Dichotomous Key provides a way to determine the Formation and/or Class depending on diagnostic information.

The key is a series of questions, each with two alternative answers (e.g. 'A' and 'A*'). To use the key, read both alternative answers, choose the most correct one and go to the next question immediately below the correct answer until you reach a formation name in *italics*. Note that for some formations there is more than one possible path to arrive at the formation (after Keith, 2004).

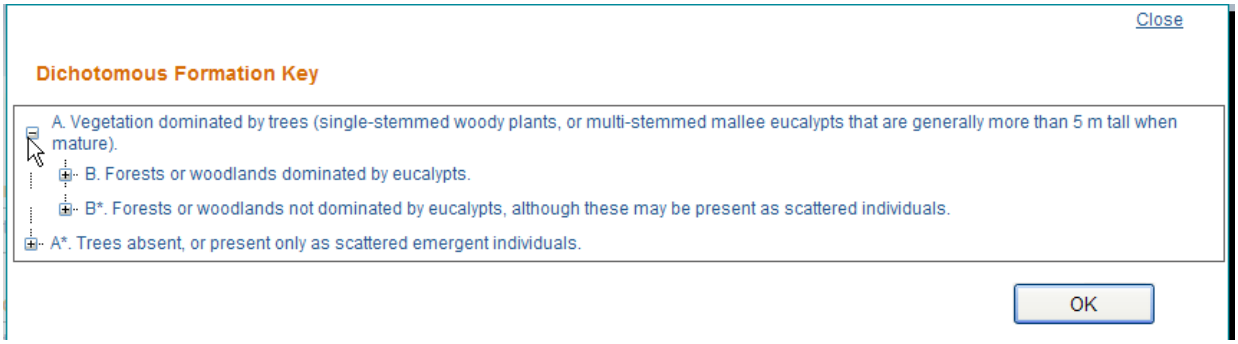
To open the Dichotomous Key, click on **Vegetation Formation Key** as shown below.



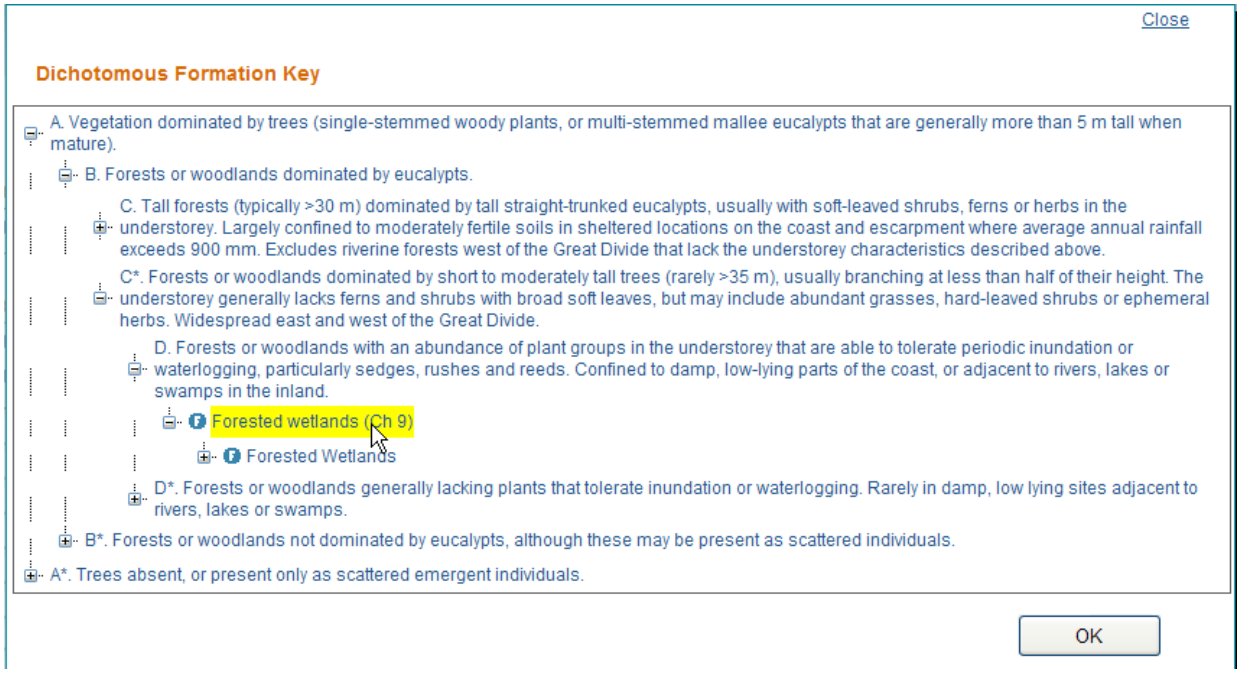
This will open the first level of the Key as shown below.



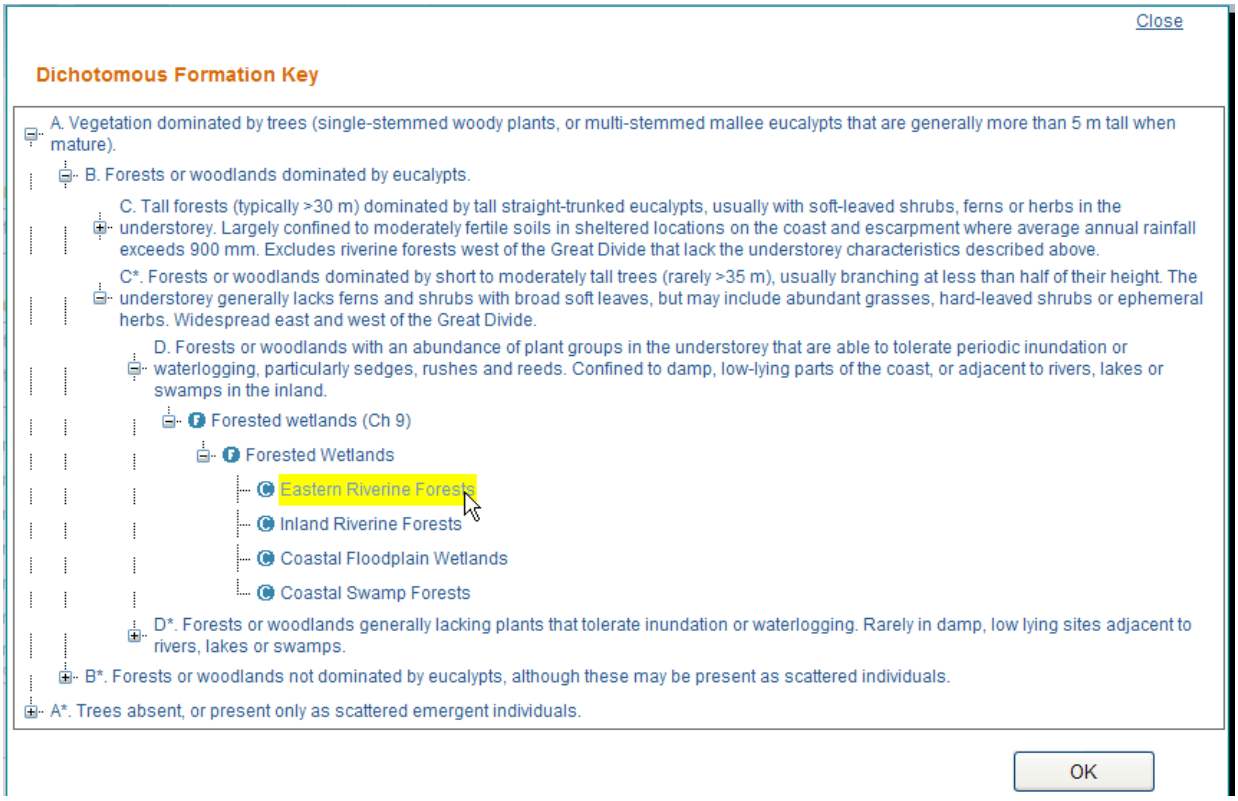
To open the next levels in the key, click on the + sign to the left of the relevant option, as shown below.



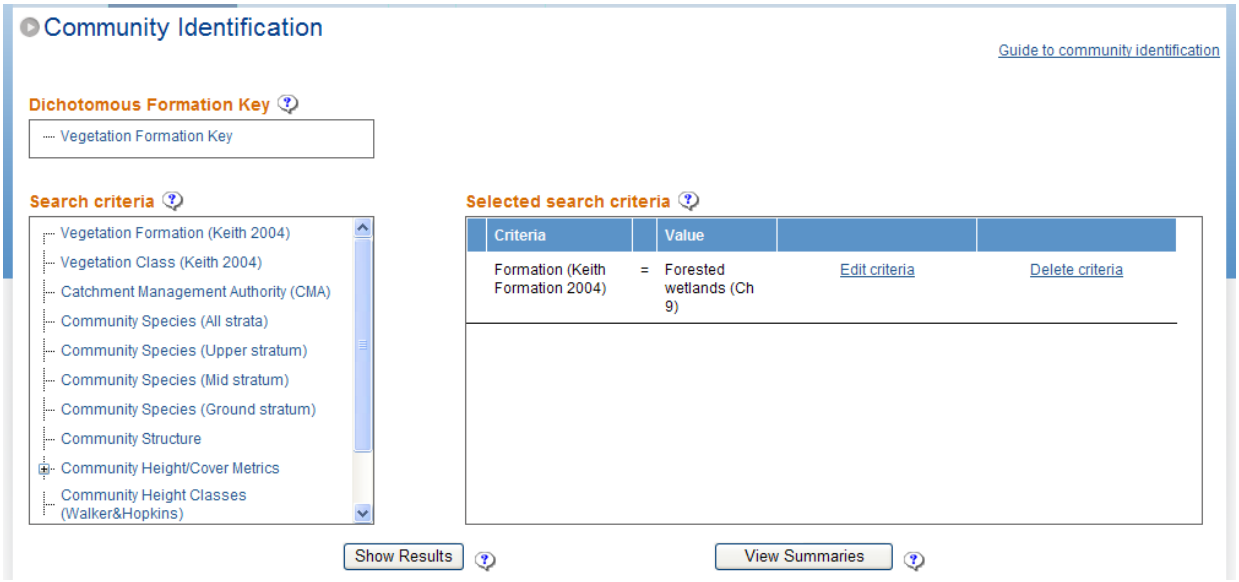
To close a level, click on the – sign next to the relevant level. Please note that you can open each level independent of other levels, i.e. unless you close a level it will remain open. Keep choosing the appropriate path until you reach the Formation description; this will be marked by a capital F icon ( ), as shown below. Click once to highlight the desired Formation (please note it might take a second or two for the selection to be highlighted) as shown below.



You can also select a Vegetation Class by opening the Formation list (click once on the + sign) which will open the Vegetation Classes for that Formation; the Classes are denoted by the capital C icon ( ). Click once to select the desired Vegetation Class, as shown below, and then click OK.



The selected Vegetation Formation (or Class) will be added to the Selected Search Criteria box at the top right.



To change or remove the selected criteria, click the Edit Criteria or Delete criteria links on the right of the relevant criterion.

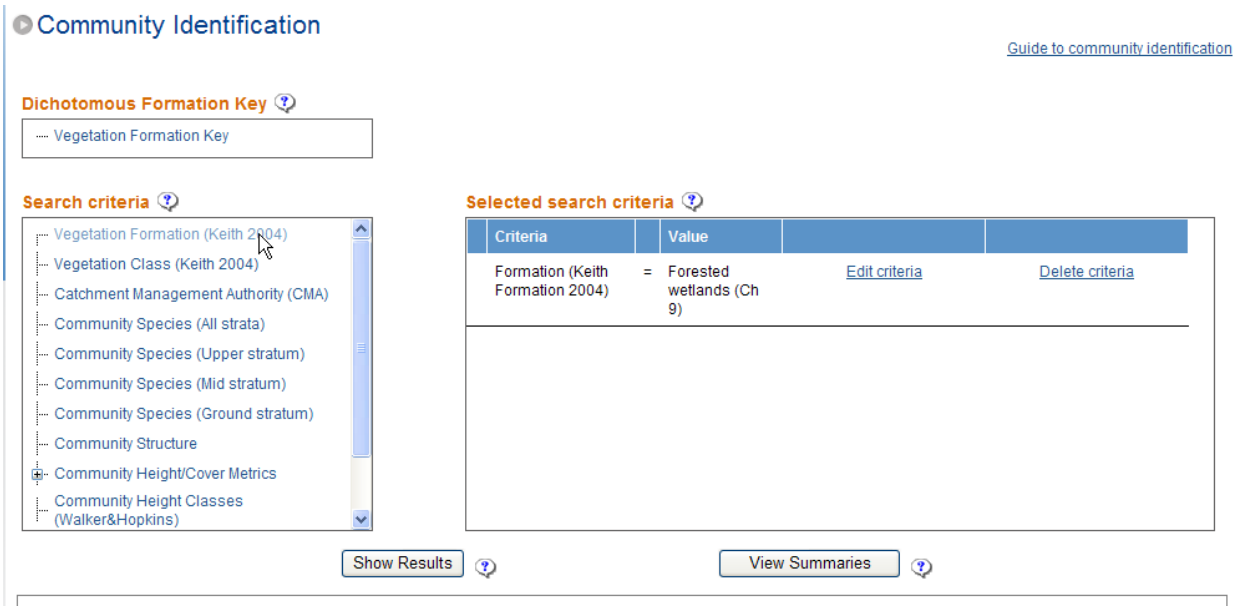
8.2 Search Criteria

The main area of the PCT Identification page is used to construct your search to identify and present summary information for individual plant community types. Please note that summary

information for the relevant Vegetation Class and Formation can also be viewed as a result of your search.

8.2.1 Vegetation Formation and Class

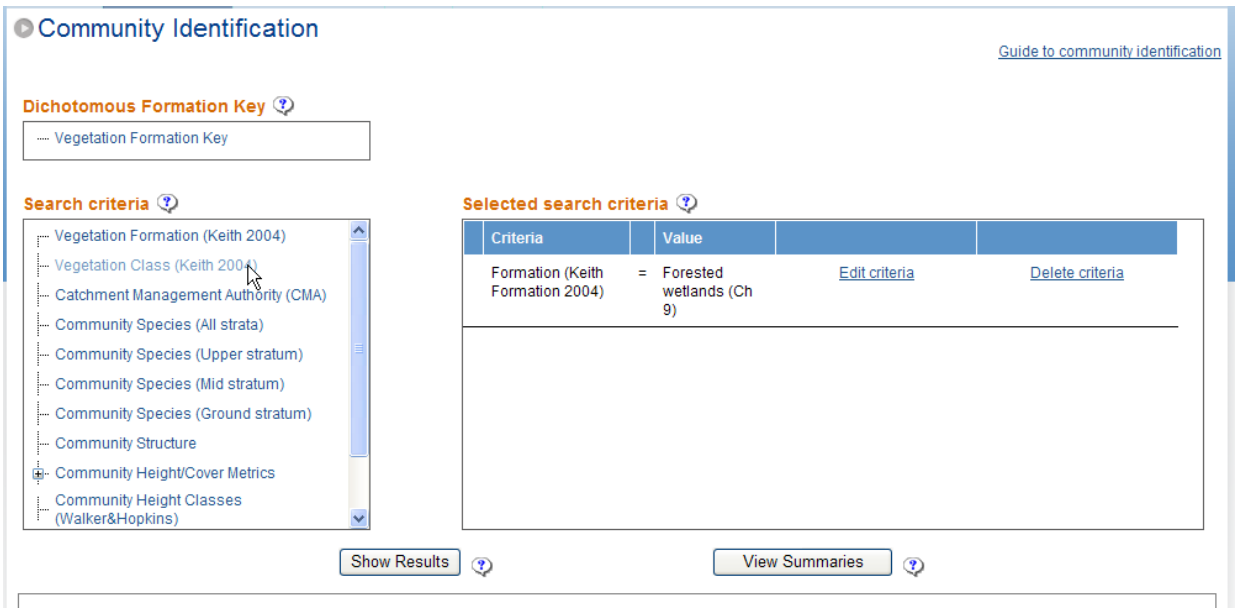
In addition to using the Dichotomous Key, Vegetation Formation and Class can also be selected via clicking the **Vegetation Formation (Keith 2004)** menu option, as shown below.



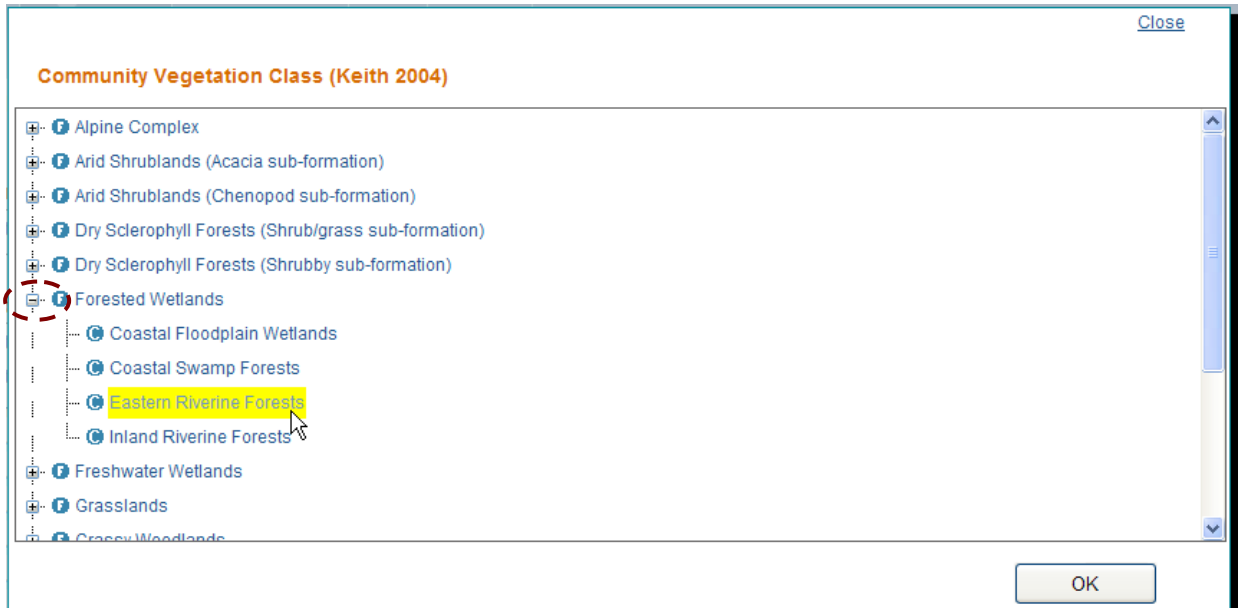
The list of Formations will appear as shown below.

Simply click once to highlight the relevant Formation (as shown below) then click OK to add it to the criteria (N.B. if you select the same Formation it will be added twice).

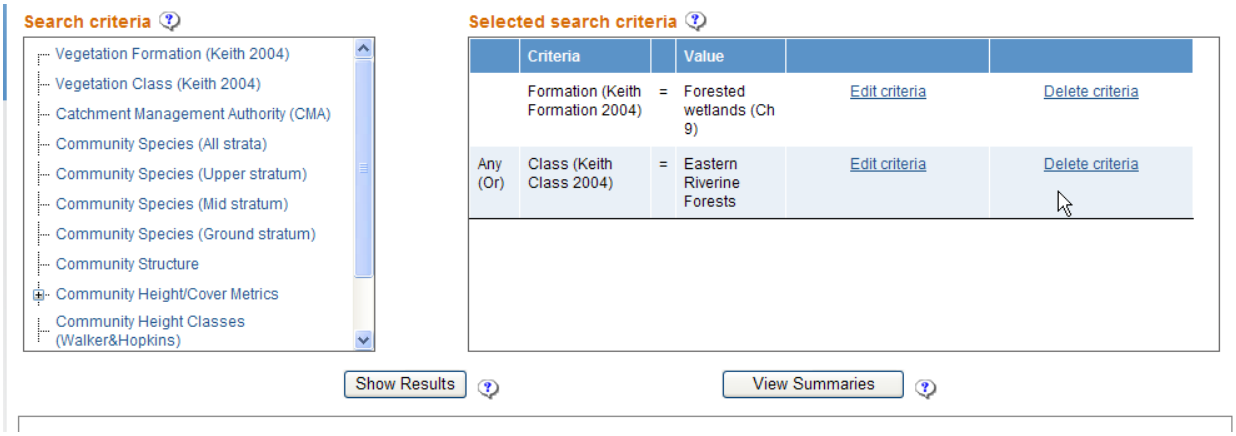
To select a Vegetation Class, click the **Vegetation Class (Keith 2004)** menu option, as shown below.



The Vegetation Classes will be grouped within their relevant Formations. Simply click on the + sign next to the appropriate Formation to open the list of relevant Classes. Click once to highlight the relevant Vegetation Class then click OK.



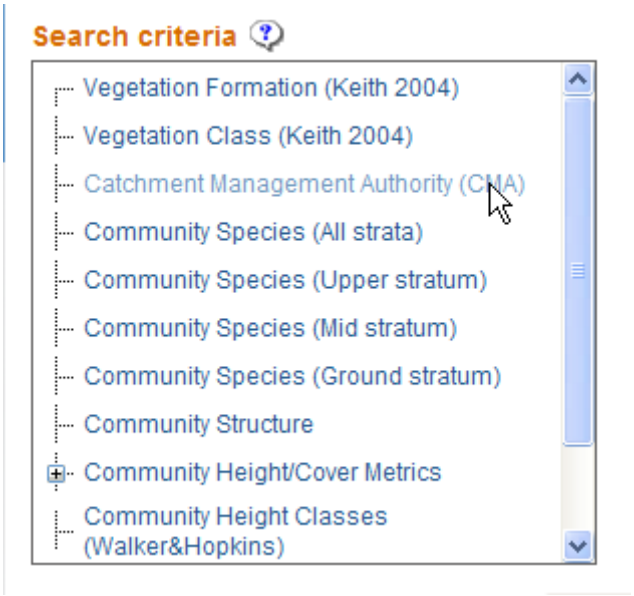
The selected information will be entered into the Search Criteria screen on the top right as shown below.

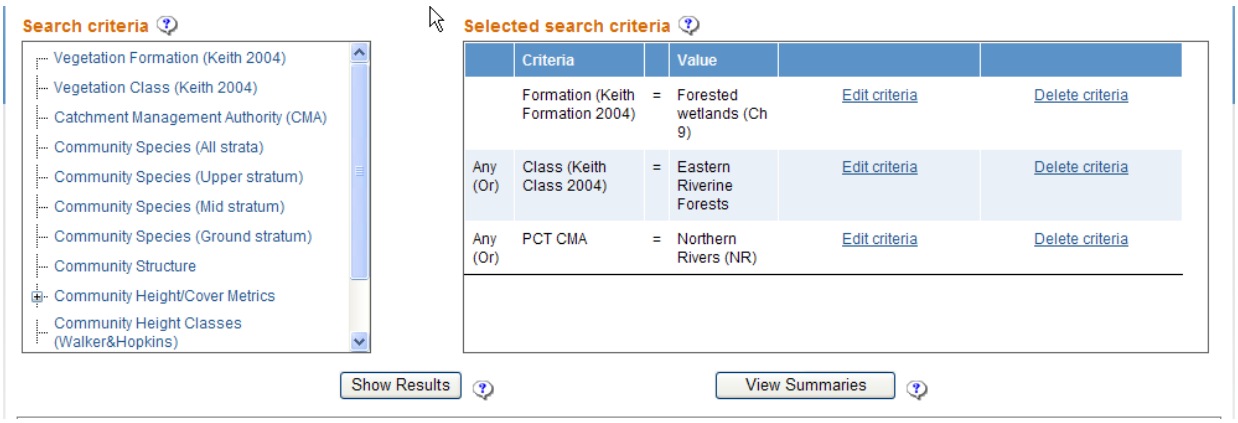


To change or remove the selected criteria, click the Edit Criteria or Delete criteria links on the right of the relevant criterion.

8.2.2 Catchment Management Authority

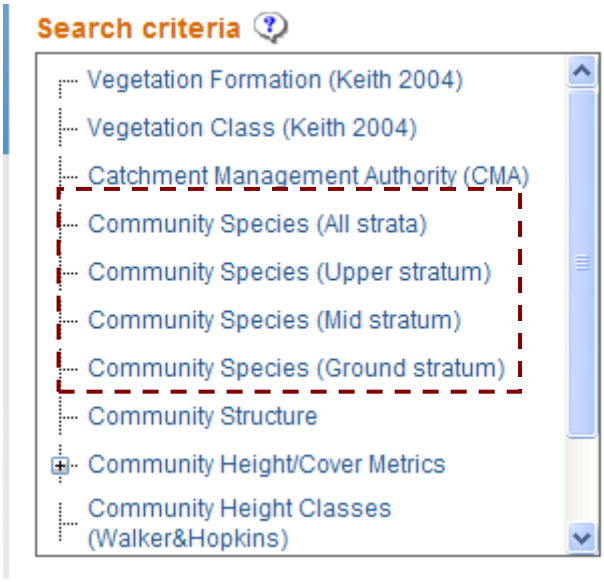
To select a Catchment Management Authority, click Catchment Management Authority (CMA) to bring up the list of CMAs, then click once to highlight the relevant CMA and click OK to enter the selected CMA into the Search Criteria, as shown in the sequence of three figures below.





8.2.3 Community Species: All strata; or Upper, Middle or Ground Stratum

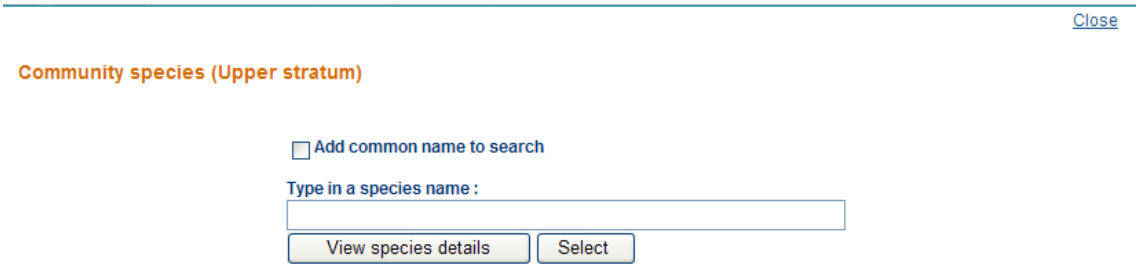
You can select PCTs by the scientific or common names of species recorded in the community, as indicated below.



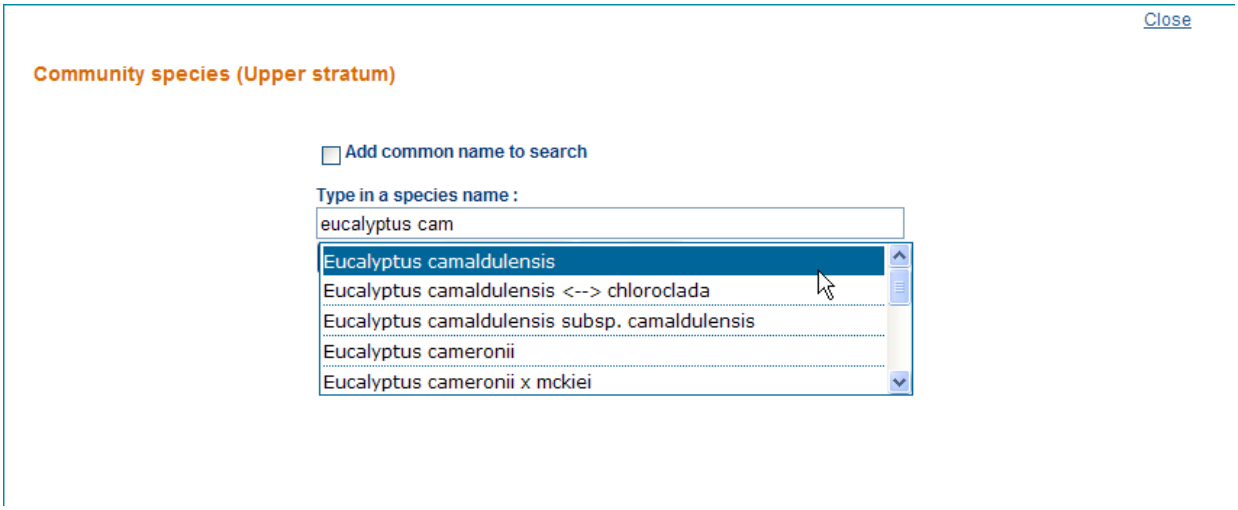
Selection of Community Species is the same for the All strata, Upper, Middle and Ground Strata so only the Upper Stratum is detailed here. Using the All strata option searches for a species that is listed in any of the species lists, i.e. Upper, Mid or Ground. If you want to select a species from within only one stratum, then use the relevant option.

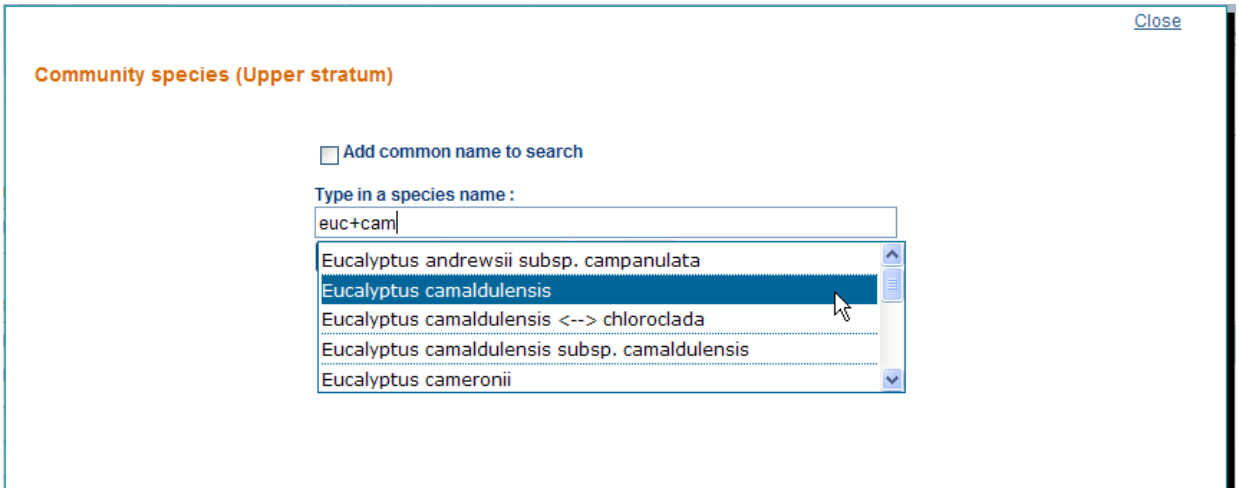
Selection of species is by clicking the **Community Species (Upper Stratum)** menu option, as shown below.

This will open the species selection screen as shown below.



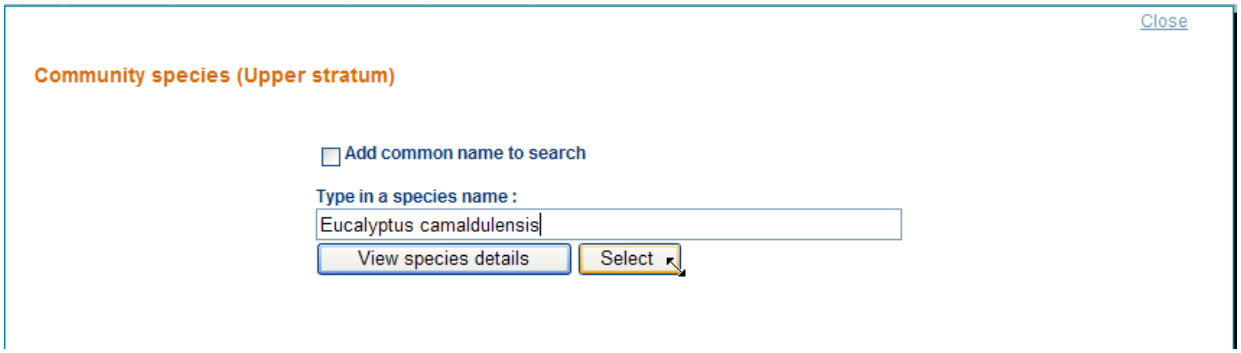
To search for a species, you can search using only the scientific name, or include the common name in the search – simply check or uncheck the Add common name to species search as required. The field will auto-search based on any three or more letters entered into the 'Type in a species name' field once there is a pause of two seconds in typing, and will retrieve matches for species names commencing with these letters. So typing 'euc' will retrieve all species with Genus name beginning with 'euc'. To use the species suffix to search on rather than select from a list based on genus, you can either type the full genus name and at least three letters of the species name, as shown immediately below, or type three (or more letters) of the genus name then + then three or more letters of the species name, e.g. 'euc+cam', as shown in the subsequent figure below.





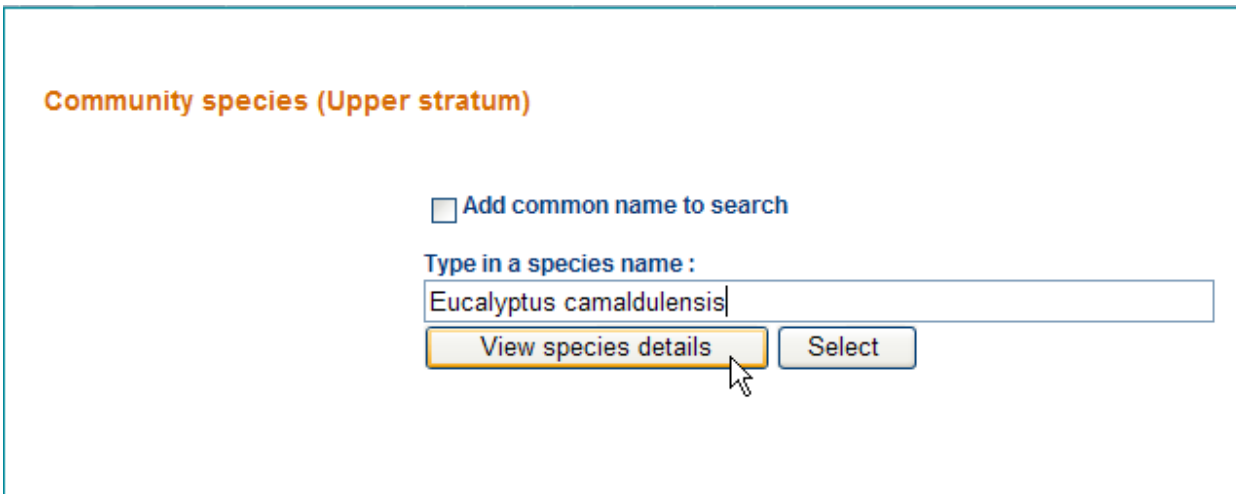
Please note there are no spaces for the + option, i.e. 'euc + cam' will not retrieve search results.

When the relevant species name appears, simply click once to select the name and then click OK to make it a search criterion as shown in the figure below.



The selected name will appear in the Search Criteria box at the top right.

If you want to view details on the species once it is entered into the species name field, click the View Species details button as shown below.



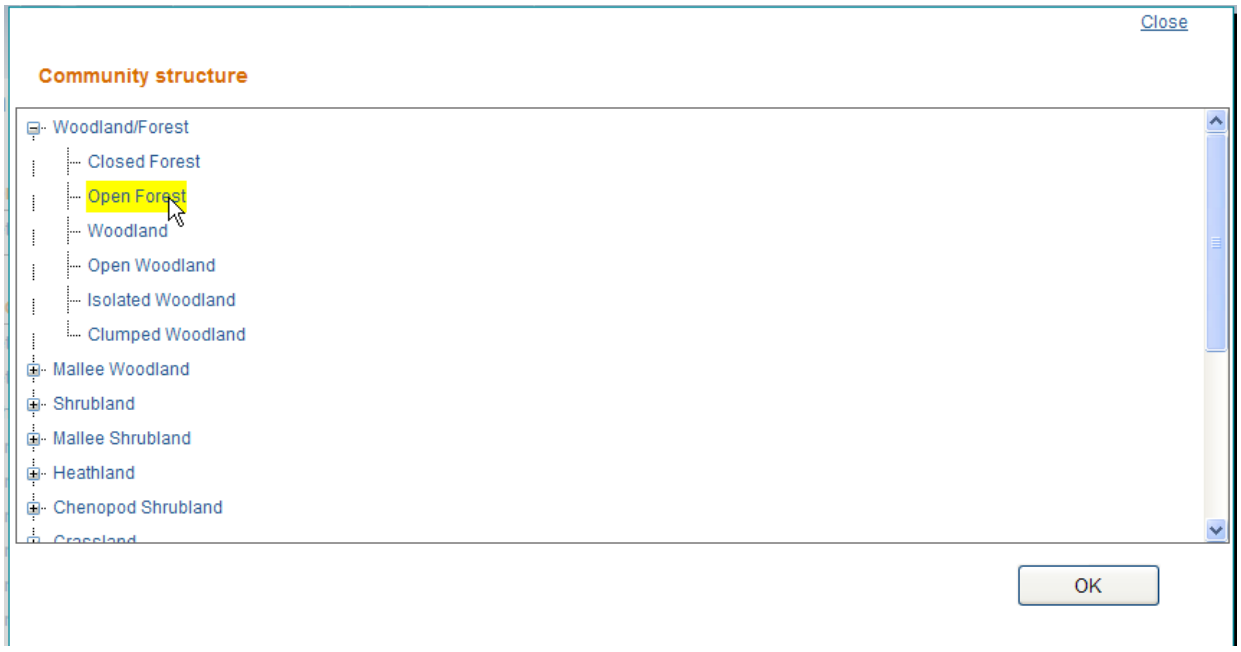
This will link directly to the PlantNet database (Royal Botanic Gardens and Domain Trust) in a separate browser window and retrieve the information on the species as shown below.

When you have finished, close the window to return to the species selection page.

8.2.4 Community Structure

To search by Community Structure (e.g. ‘Woodland’, ‘Open Woodland’) click the Community Structure option from the criteria list as shown below.

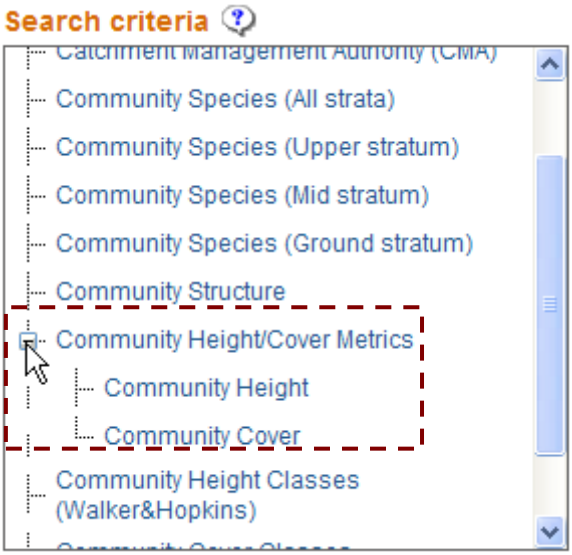
This will open the list of available Community Structure terms. Each of these terms contains the list of relevant community structures as defined in Walker and Hopkins (1990) for that growth form group (N.B. Woodland contains 'forest' as well as 'woodland' types). Click on the + sign next to the relevant group to open the community structure terms within that group, click once to highlight the relevant term then click OK to add the term to the search criteria, as shown below.



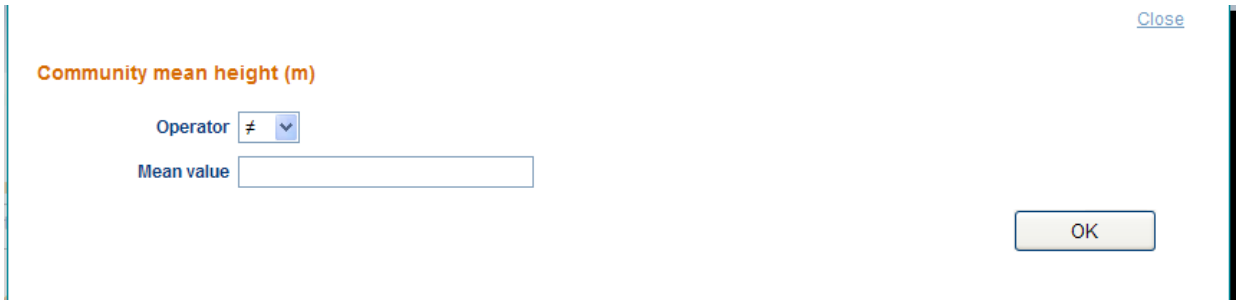
The selected term will appear in the Search Criteria box at the top right.

8.2.5 Community Height (Mean)/ Cover (Mean) Metrics

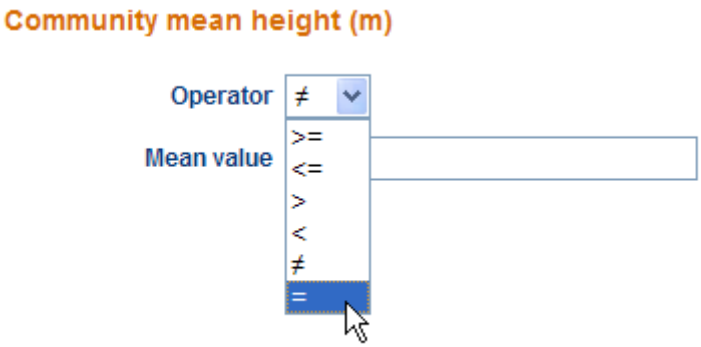
You can search for plant community types by specifying actual measures of structure in terms of height and cover for the community. Click on the + sign next to the Community Height/Cover Metrics option in the Search Criteria list to open the two available paths as shown below.



Click on Community Height to open the relevant dialogue box as shown below.

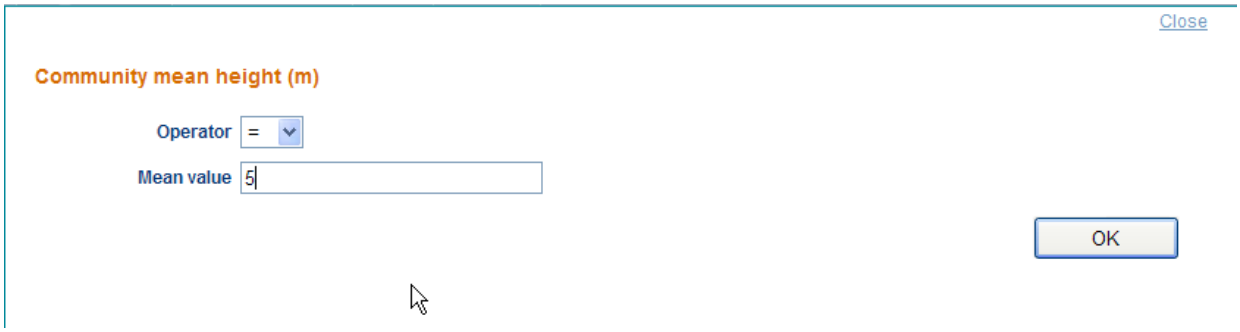


Select the appropriate operator for the mean height you are interested in. The operators provided are shown below.



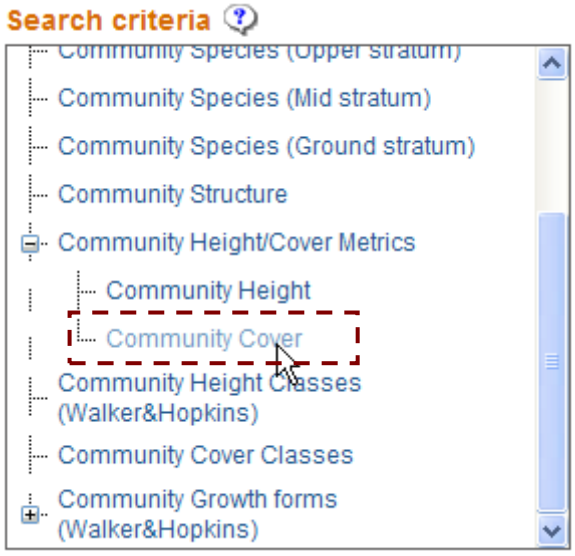
To search within a range you will need to define each end of the range separately as a single entry for a range is not supported. Simply create one criterion based on one end of the range, add it to the Search Criteria list, then create another criterion to define the other end of the range and add that to the list.

Enter the actual figure (integer) to represent the mean height in metres, then click OK as shown below (example below defines mean height equal to 5 metres).

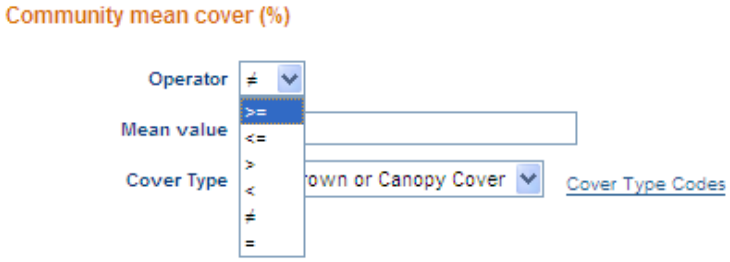


The selected term will appear in the Search Criteria box at the top right.

Click on Community Cover to open the relevant dialogue box as shown in the two figures below.

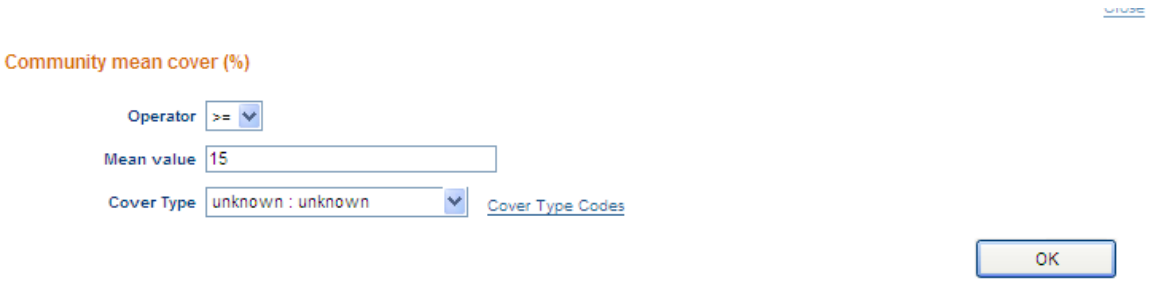


Select the appropriate operator for the mean cover value you are interested in. The operators provided are shown below.

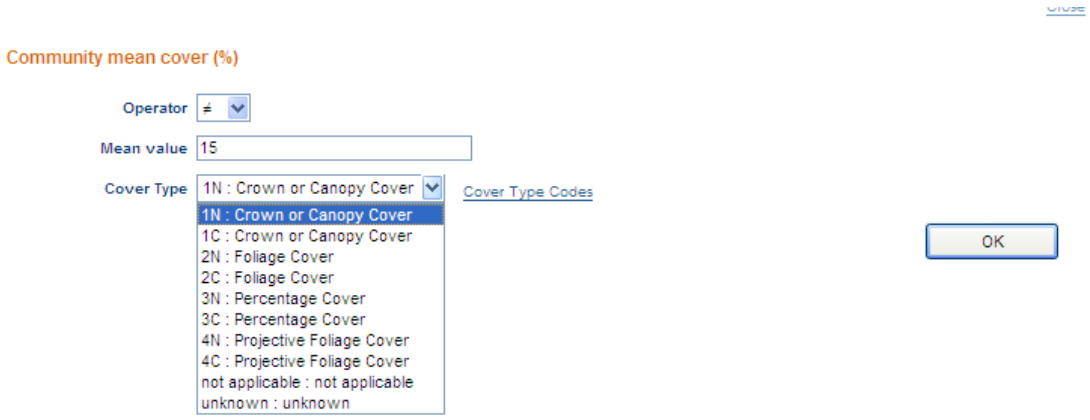


To search within a range you will need to define each end of the range separately as a single entry for a range is not supported. Simply create one criterion based on one end of the range, add it to the Search Criteria list, then create another criterion to define the other end of the range and add that to the list.

Next enter the actual figure (integer) to represent the cover percentage, as shown below (example below defines mean cover based on Crown or Canopy Cover type equal to or greater than 15%).

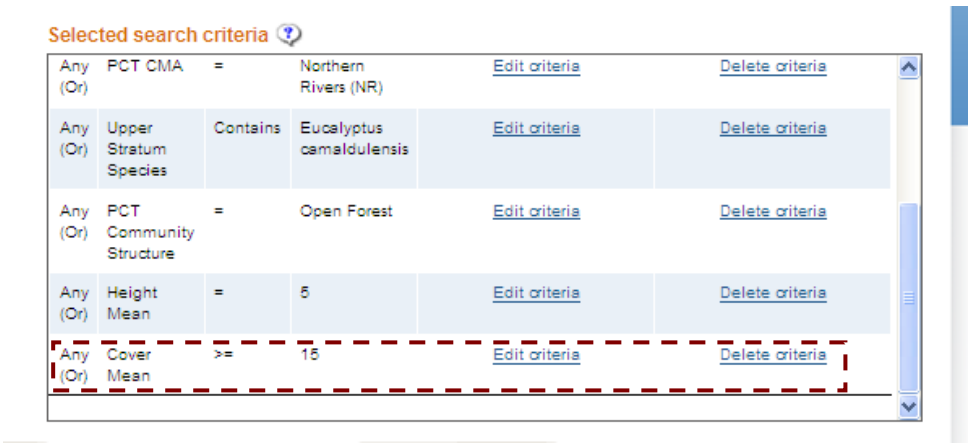


Select the Cover Type you want to use, as shown below and then click OK.



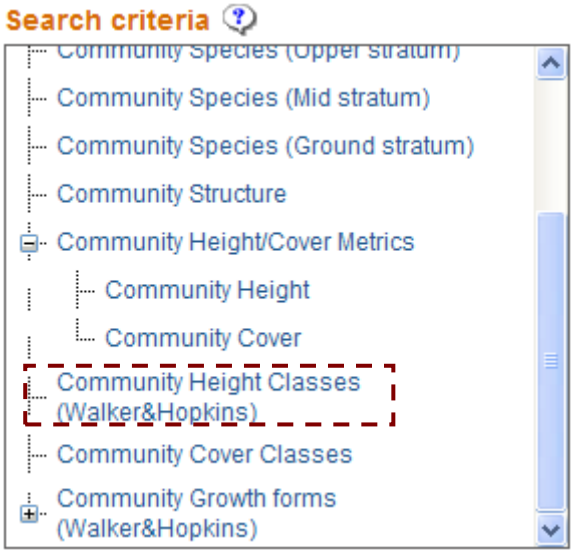
Further information on cover types is provided in Walker and Hopkins (1990), specifically pp. 66-77, and a summary table from that publication is provided at Attachment 2.

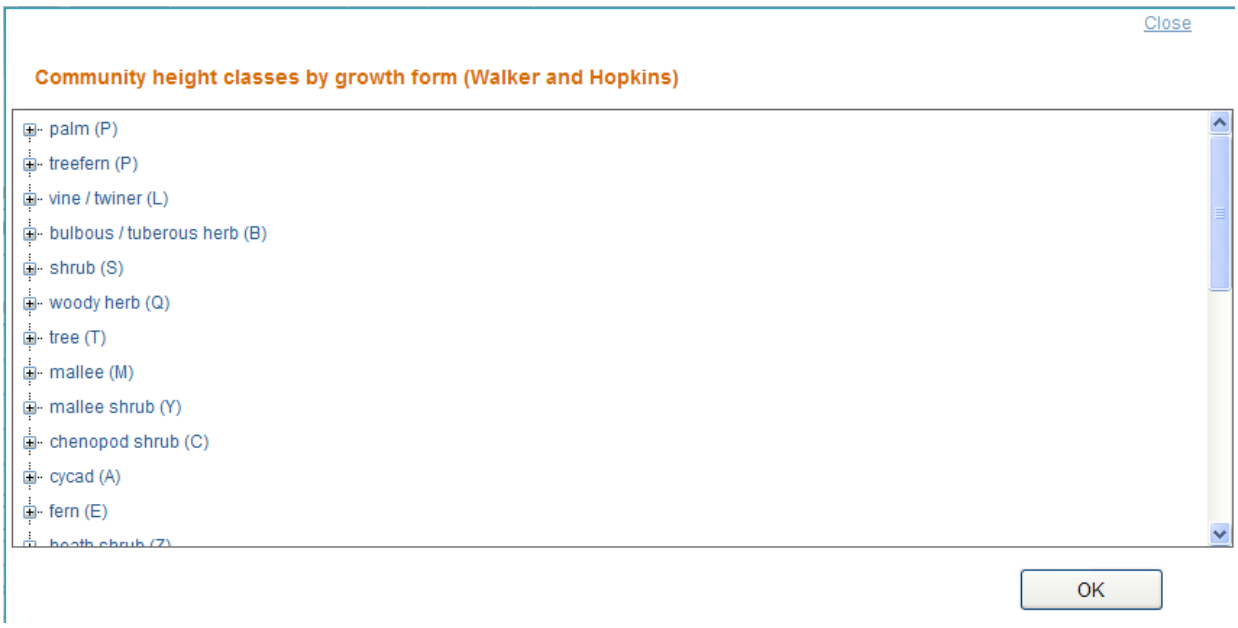
The selected term will appear in the Search Criteria box at the top right as shown below.



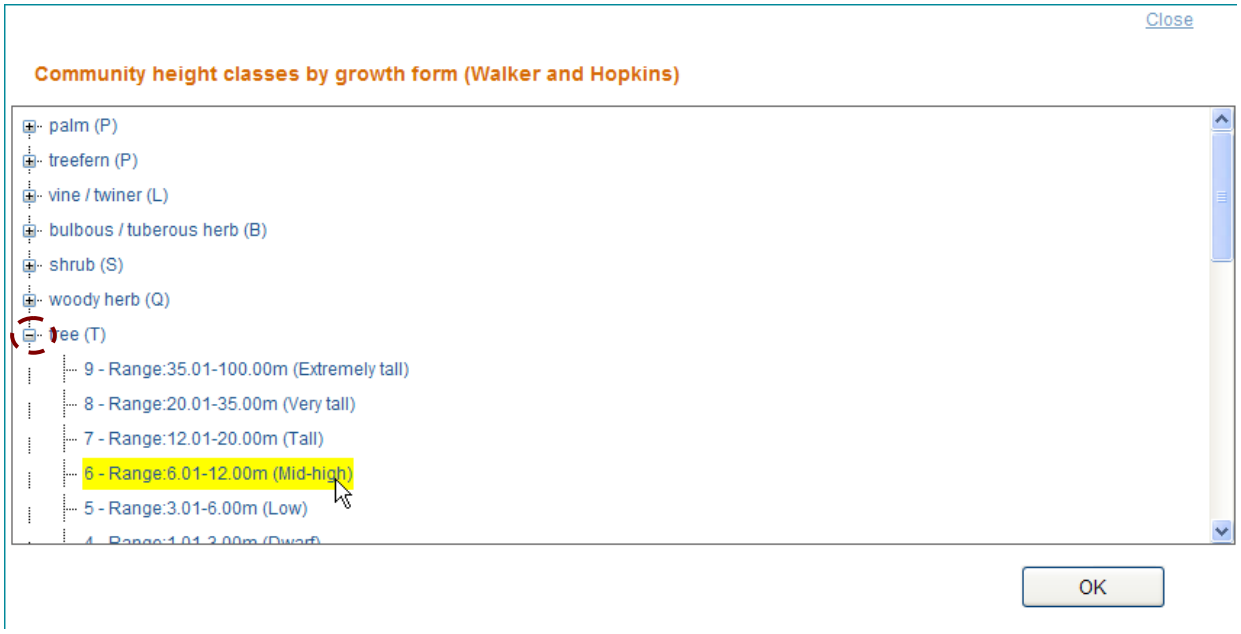
8.2.6 Community Height Classes

Click on Community Height Classes in the Search Criteria list to bring up the list of Height Classes as shown in the two figures below.





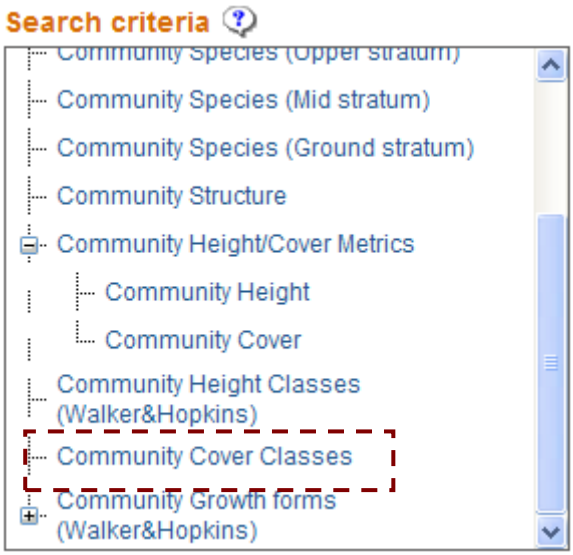
Each of these terms contains the list of relevant community height classes as defined in Walker and Hopkins (1990) for that growth form group. Click on the + sign next to the relevant group to open the community height classes within that group, click once to highlight the relevant term then click OK to add the term to the search criteria, as shown below.

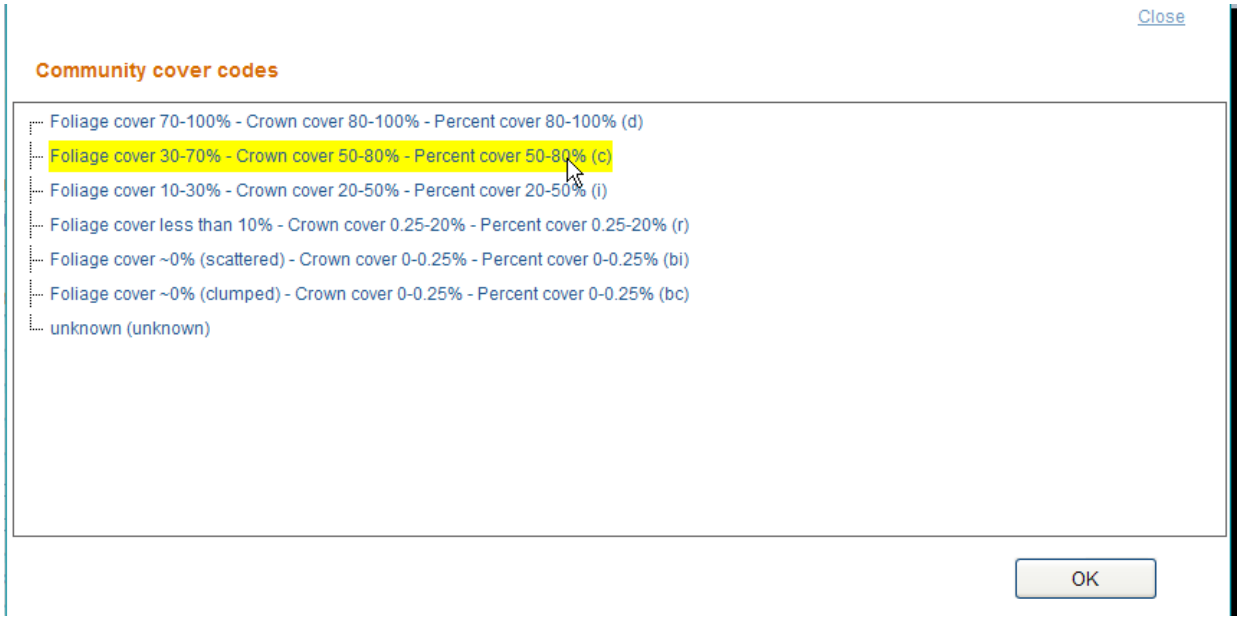


The selected term will appear in the Search Criteria box at the top right.

8.2.7 Community Cover Classes

Click on Community Cover Classes in the Search Criteria list to bring up the list of Cover Classes. Click on the relevant Cover Class then click OK to add the term to the search criteria, as shown in the sequence below.

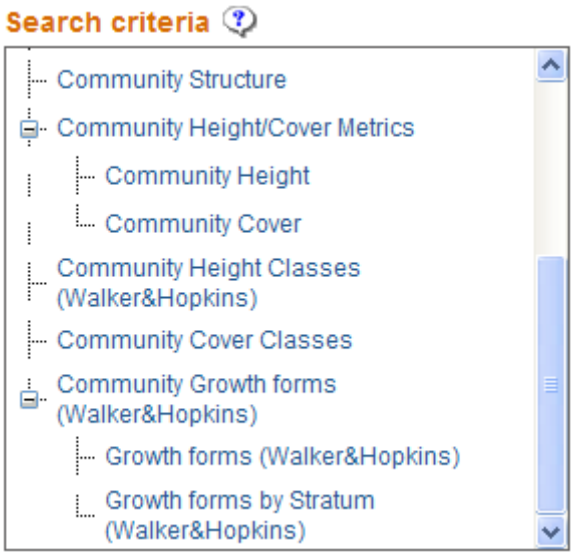




The selected term will appear in the Search Criteria box at the top right.

8.2.8 Community Growth Forms

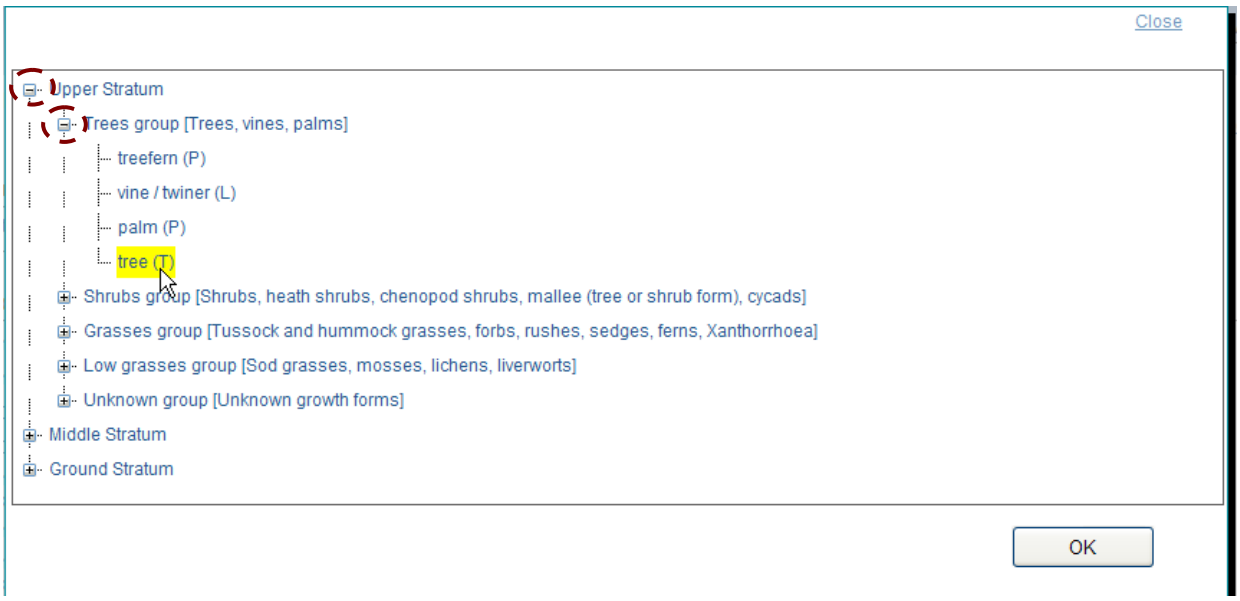
You can search for plant community types by specifying the growth forms within the community overall, or within specific strata. Click on the + sign next to the 'Community Growth Forms (Walker and Hopkins)' option in the Search Criteria list to open the two available paths as shown below (N.B. you may need to scroll down the list to view these).



Click on 'Growth Forms (Walker and Hopkins)' to bring up the list of growth forms. Open the subsections of growth forms by clicking the + sign next to the appropriate term, then click once to highlight the desired growth form then click OK to add the growth form to the Search Criteria as shown in the sequence below.

The selected term will appear in the Search Criteria box at the top right.

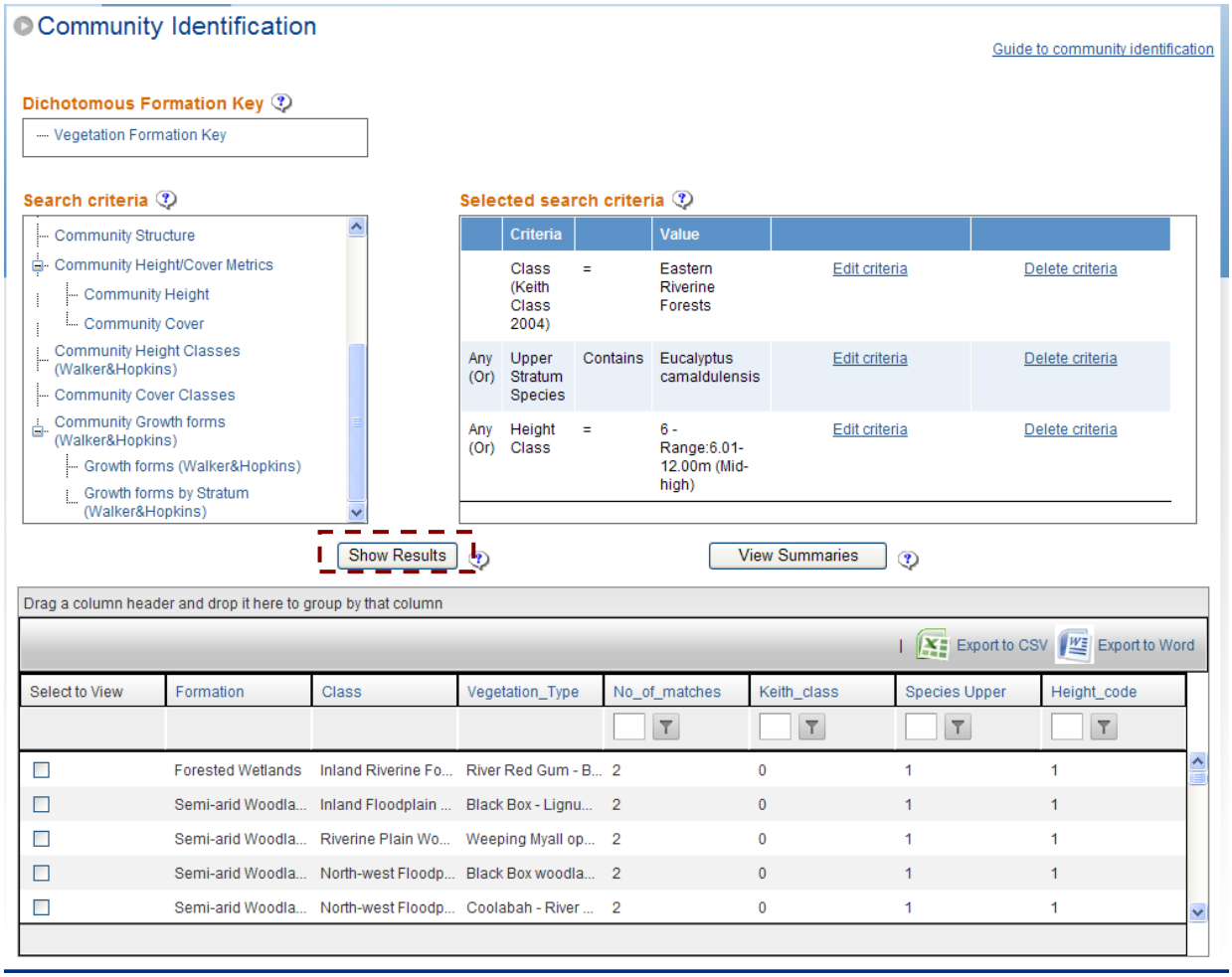
Click on 'Growth Forms by Stratum (Walker & Hopkins)'. The Stratum selection screen will appear. Open the sub-lists by clicking the + sign until you reach the list of available growth forms (black font). Click once on the relevant growth form, as shown below, and then click OK.



The selected term will appear in the Search Criteria box at the top right.

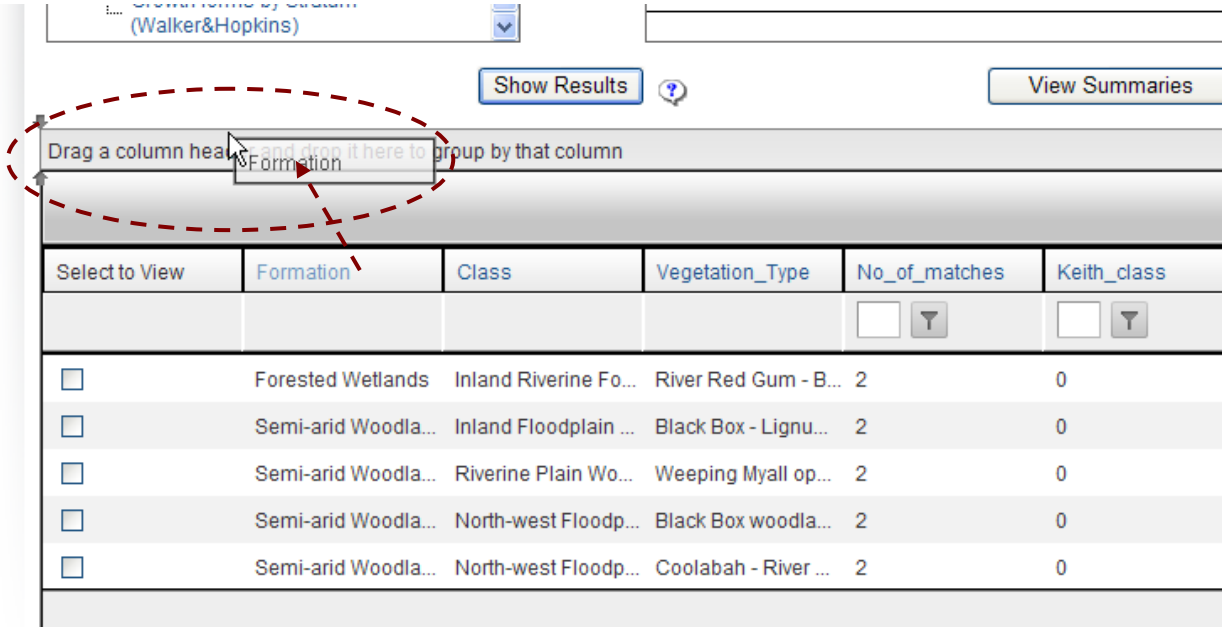
8.3 Show results

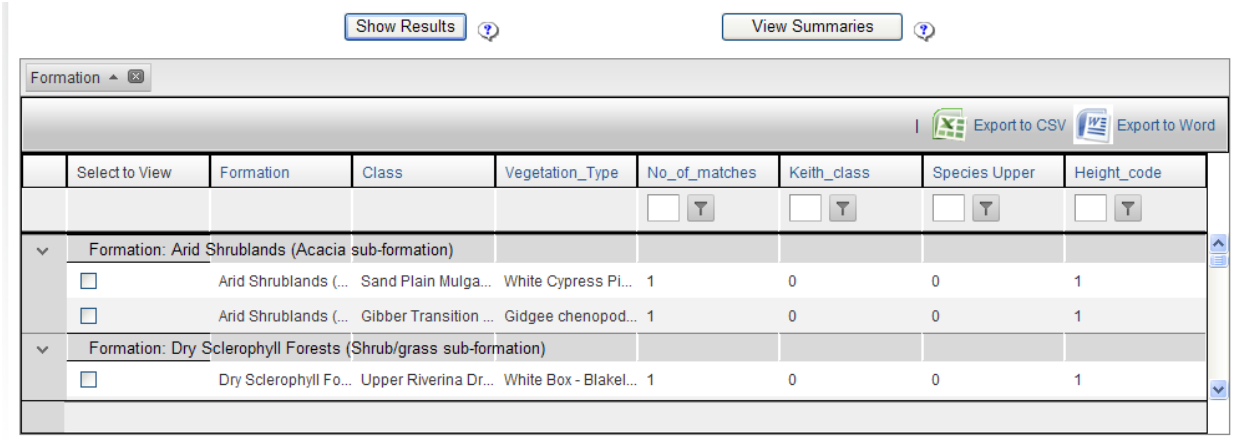
At any time while you are building your search criteria you can have the plant community types currently matching your criteria displayed. To do this, simply click the ‘Show Results’ button and the results will be displayed in the results section at the bottom of the page as shown below.



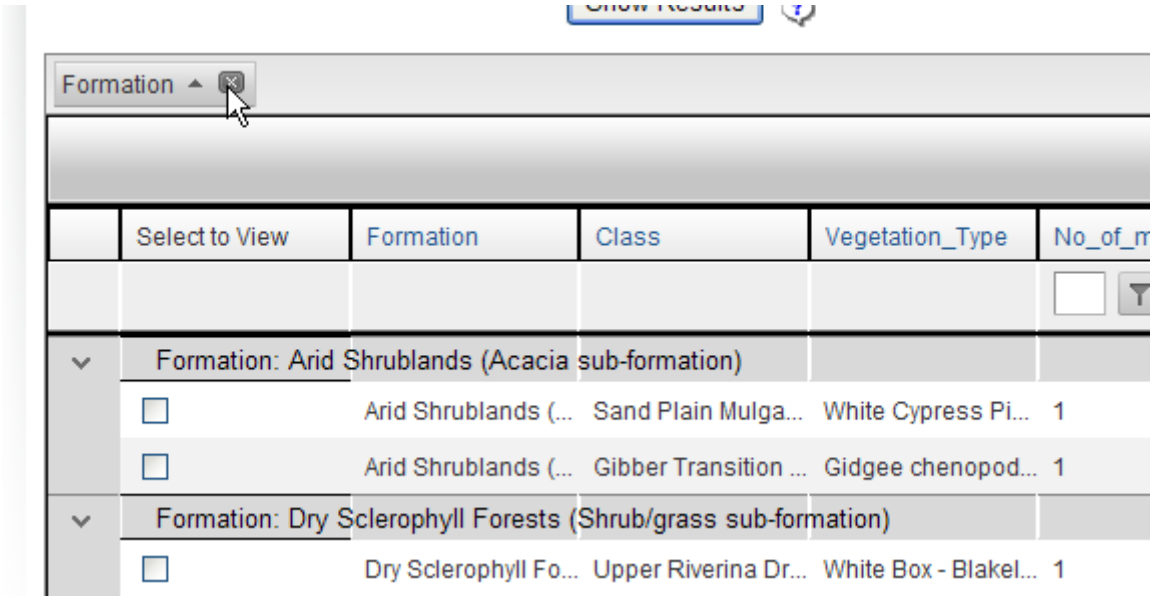
The results area presents the matching list within a hierarchy of Vegetation Formation, Vegetation Class and plant community type, as denoted by the column names.

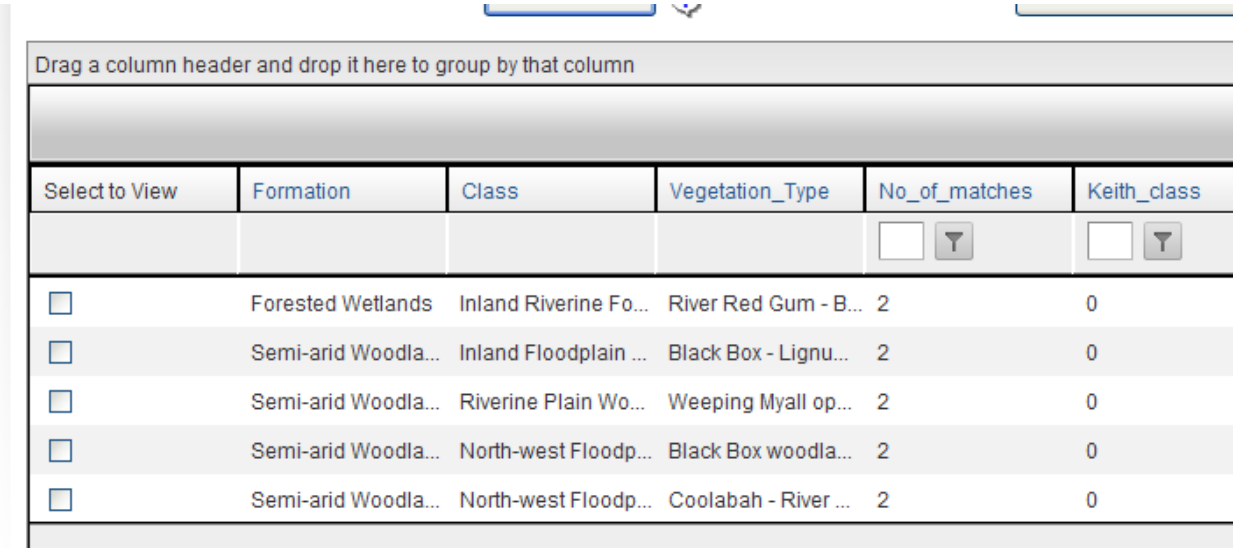
To group the results alphabetically by one of these, simply drag the column name into the area above marked ‘Drag a column header and drop it here to group by that column’, as shown in the two figures below.





To remove the grouping, simply click the x on the column name in the sort area as shown below. The list will revert to the non-sorted list as shown in the two figures below.



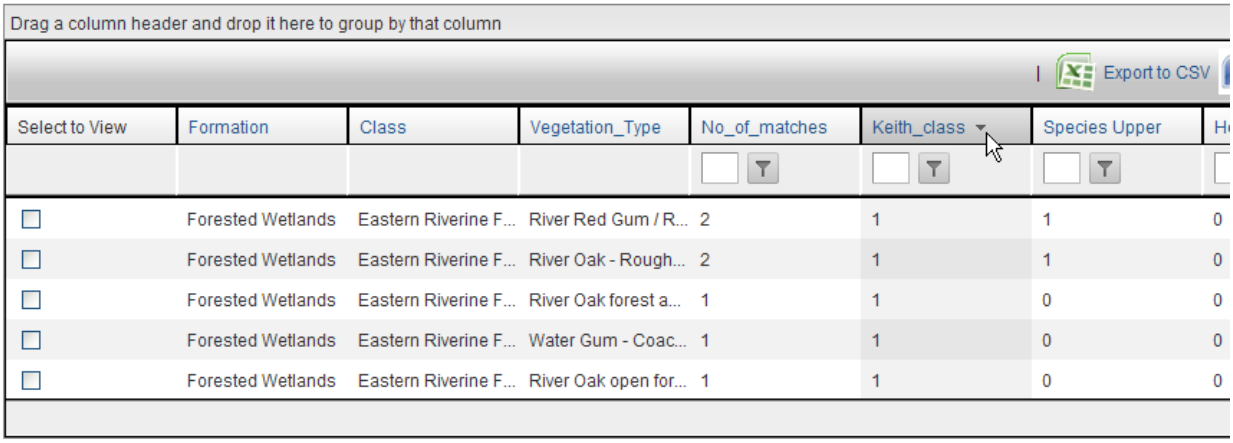


For each plant community type displayed, the total number of criteria matched is shown in the column labelled ‘No_of_matches’.

Each of the search criteria used will be listed in separate columns with 0 or 1 in the row for each plant community type listed to indicate if the PCT is matched (1) or not (0) on that criteria.

8.3.1 Sorting Results

By default, the results are initially displayed in order of the total number of matches (i.e. numbers in the ‘No_of_matches’ column) in descending order, i.e. highest at top. You can sort the results list in ascending or descending order for any column by clicking on the relevant column header, as shown in the sequence below (‘Keith Class’ is used as the example here).



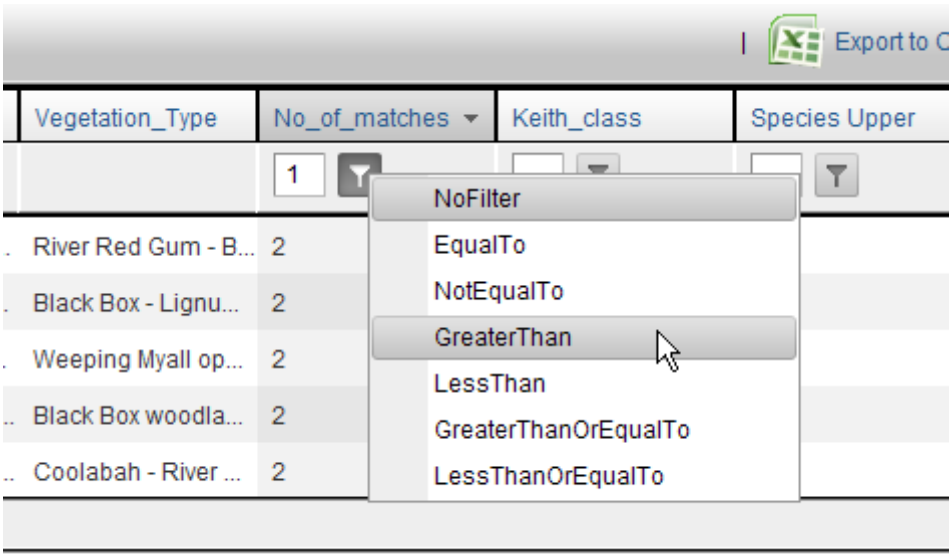
Click on the column header again to reverse the sort order. The column currently used to sort the results will be shown as dark grey.

You can adjust the width of the columns by moving the cursor over the split between any two columns – when the cursor changes to the column width adjust icon, as shown above, click and

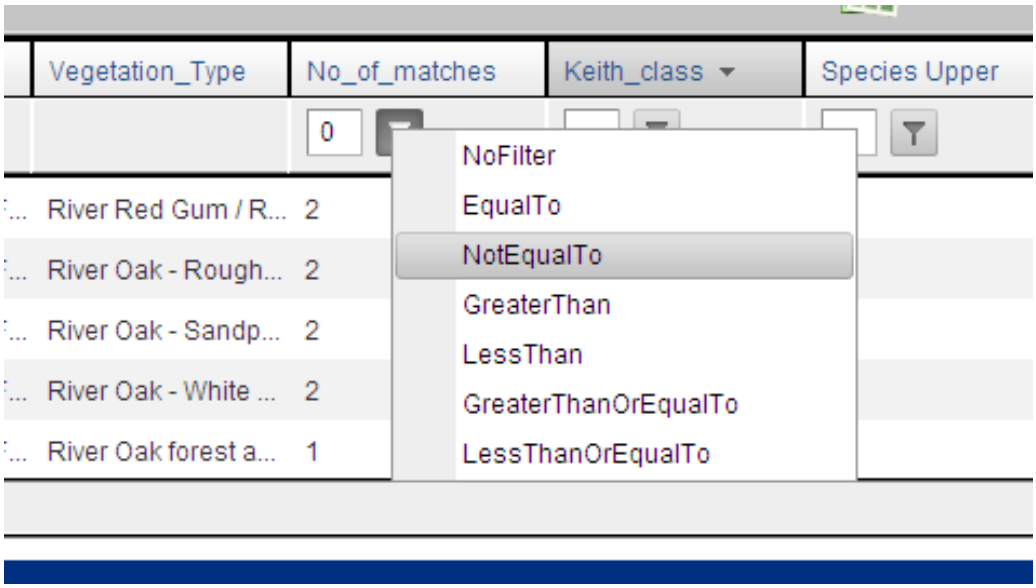
hold to drag the width of that column to their desired width. Please note however, that the column width will revert to default each time a new set of results is displayed.

8.3.2 Filter Results

You can apply a filter to further refine the results shown based on the column results. Type the desired number to filter by into the box under the column name. Then click the Filter Tool icon - - in that column and select the desired operation from the list, as shown below.



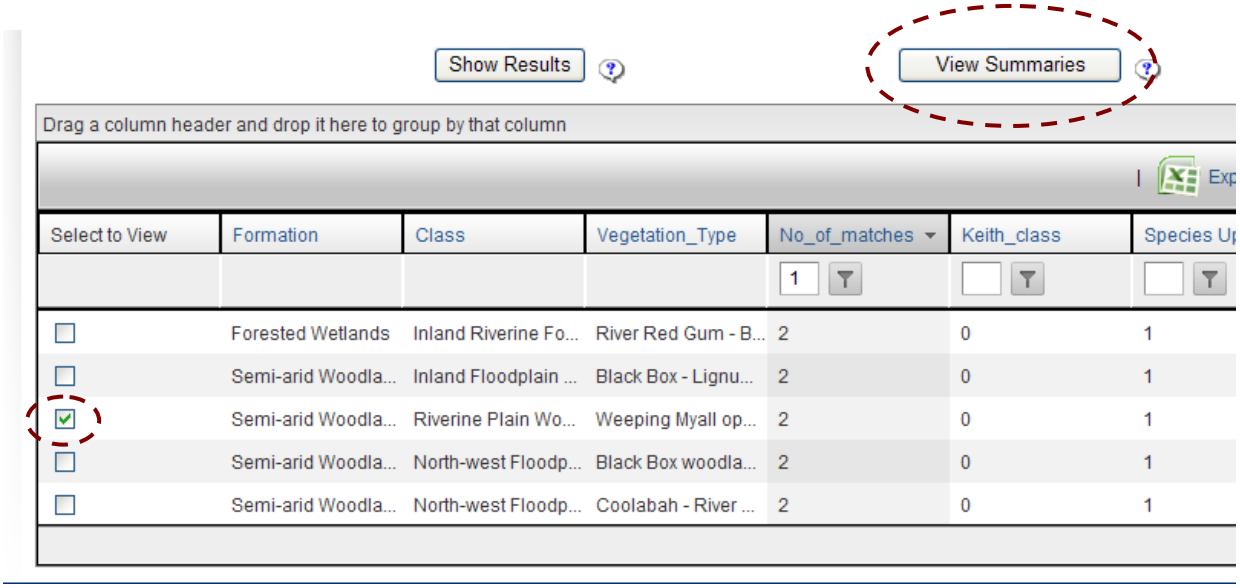
The results will reflect your changes. In the example below, the selection for '0' was filtered out from the 'No_of_matches' column.



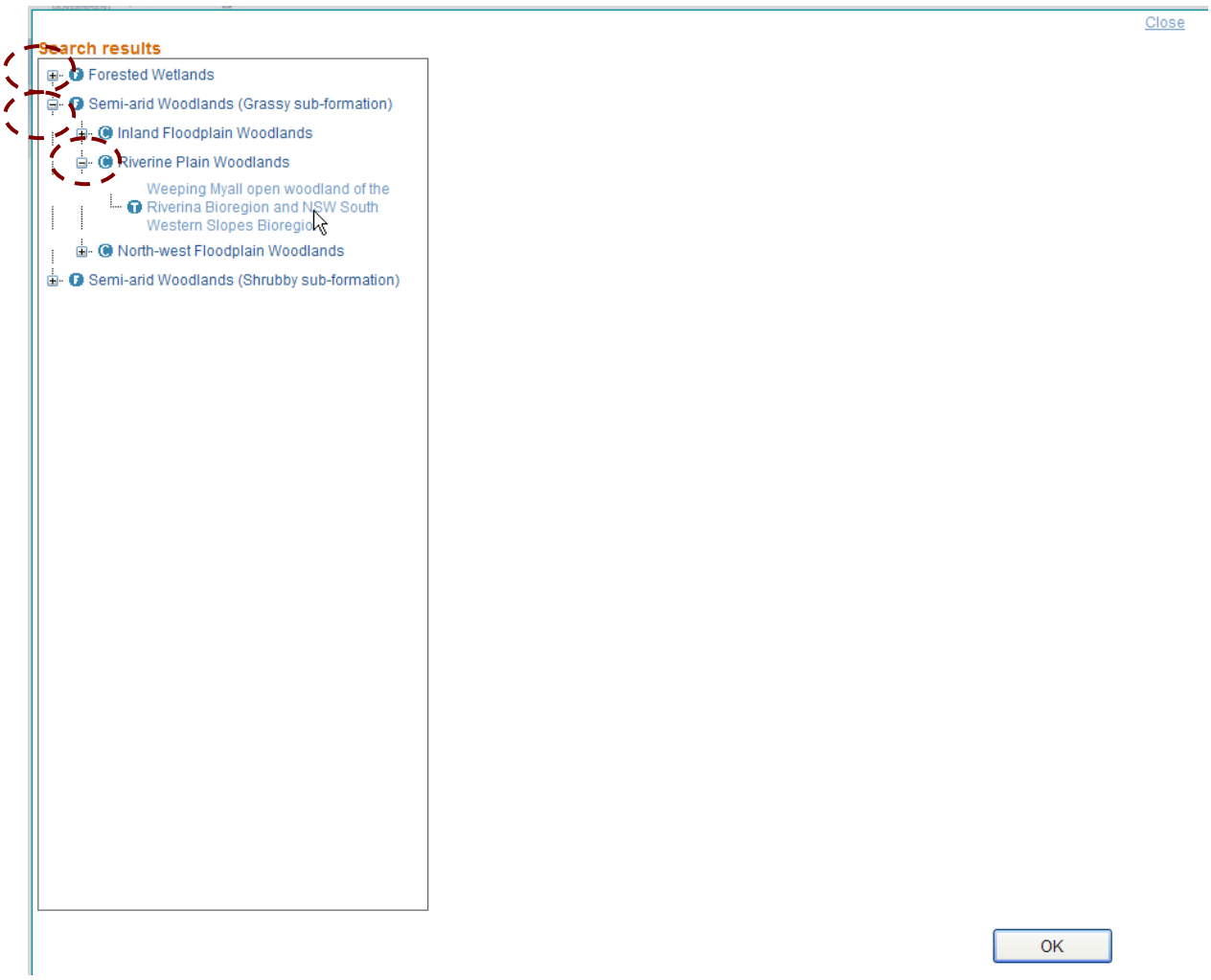
Please note that you can also apply filters simultaneously between different columns.

8.4 View Summaries

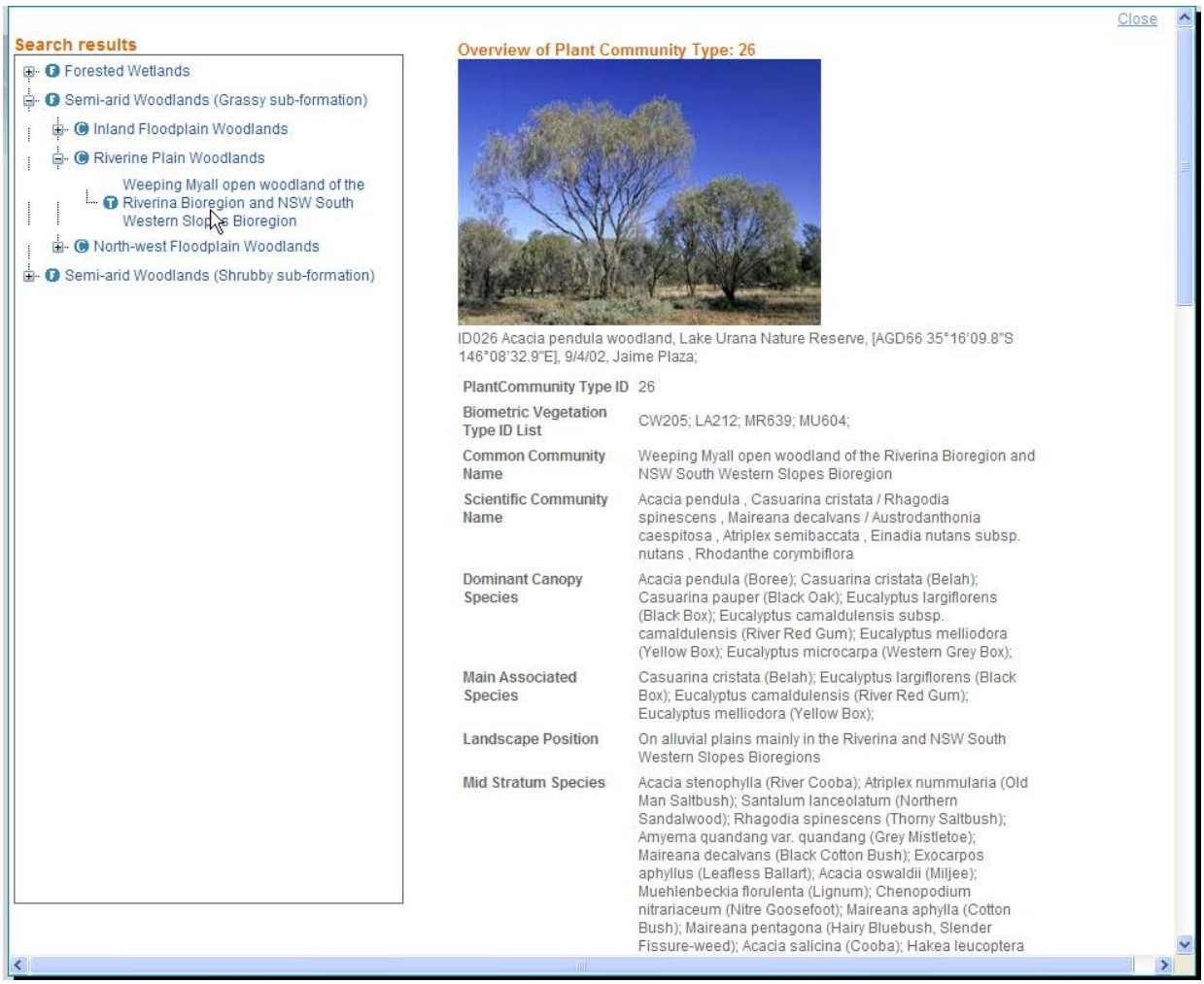
At any time once you have results listed in the results area, you can view summary information for the listed plant community types, and for their relevant Vegetation Classes and Formations. To view summaries for all the types listed leave the selection boxes unchecked. To select individual types from the list, use the check boxes next to the relevant plant community types listed, as shown below (you can check as many as you like, but please note that the retrieval of the summaries may slow down if a large number are selected).



Once you have selected which types you want to view, click the 'View Summaries' button. Please note that the page opens with the types to be viewed nested within the relevant Formation name for each type. To view the Classes or plant community type names, click on the relevant '**+**' signs to open those subgroups, as shown in the example below.



Click on one of the names (plant community type, Class or Formation) and the summary information (including an image if one is available) will be displayed, as shown below. You can view the Formation and Class summary for the plant community type by clicking on the headers in the display area on the right. If you clicked on a Formation or Class name the plant community type below will be the first one listed in the Summary View List by default.



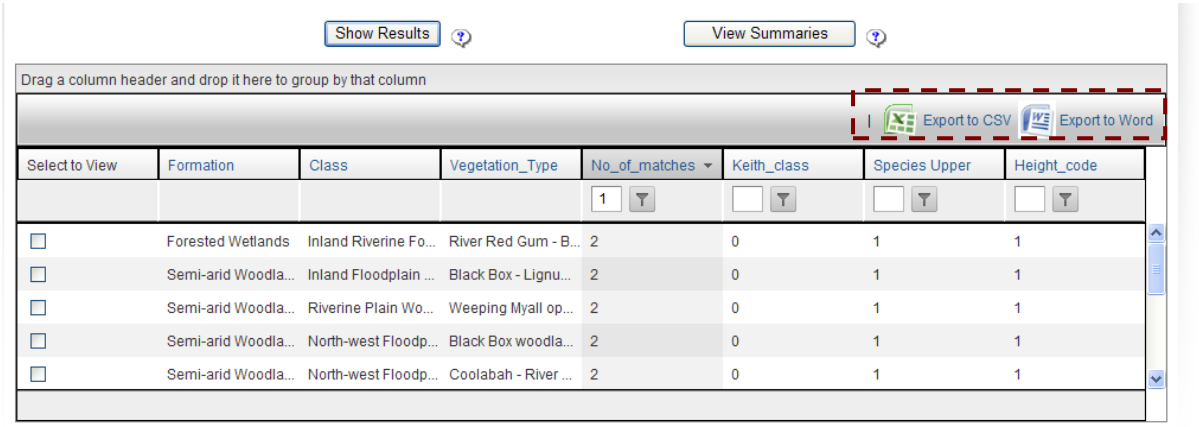
You will probably need to scroll down this page to view all the information.

To view another summary, simply click on another name.

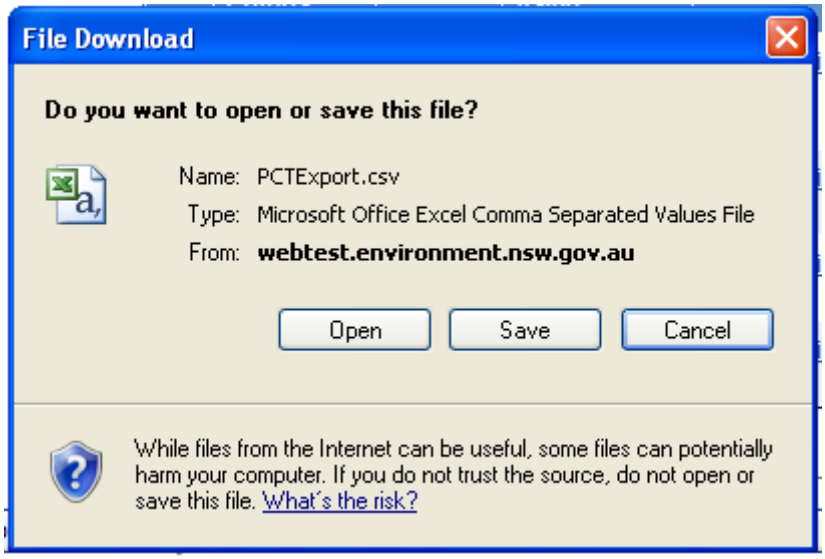
Click Close at the top, or the OK button at the bottom of the page to exit the Summary View screen.

8.5 Exporting Lists

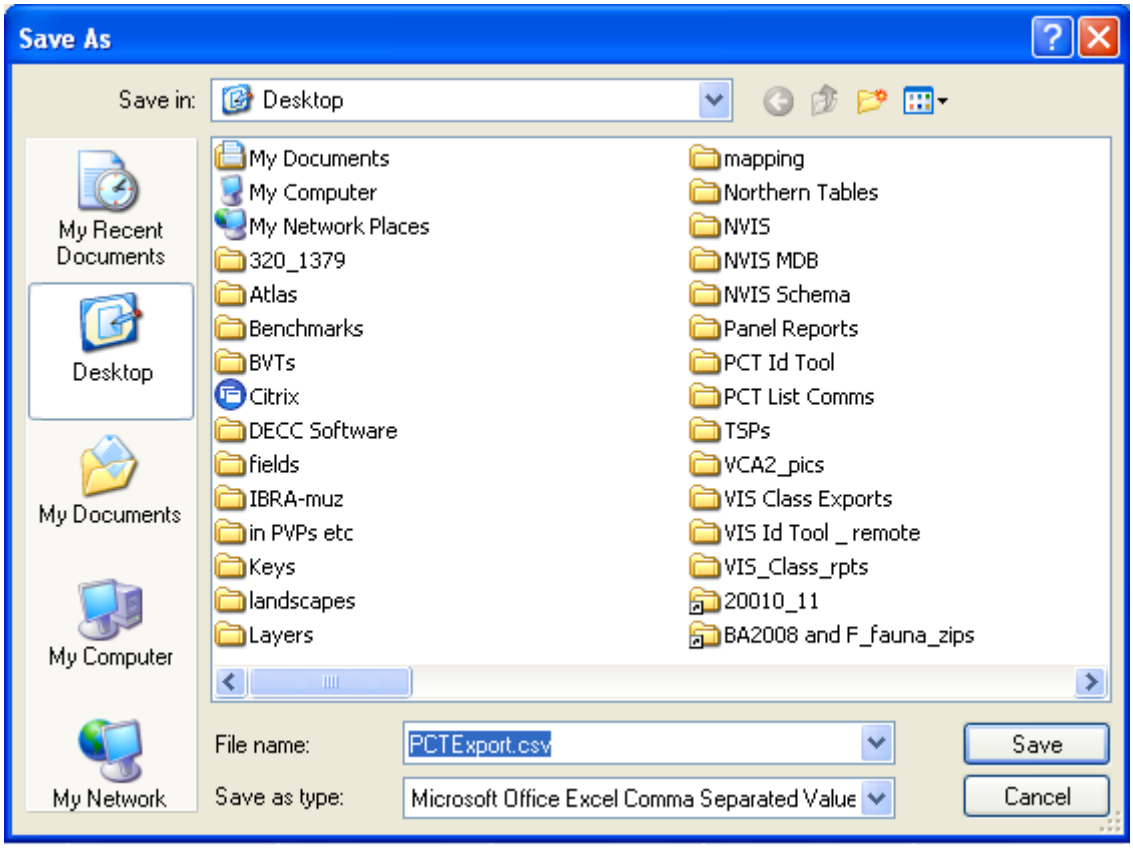
You can export the list of matched plant community types at any time (provided types are listed in the display area, i.e. after 'Show Results' has been clicked). The options are to export as a csv file (suitable for opening in a spreadsheet program, e.g. MS Excel) or as a MS Word document.



To export as a csv file, click the 'Export to CSV' icon or text area. A Save dialogue will open as shown below.



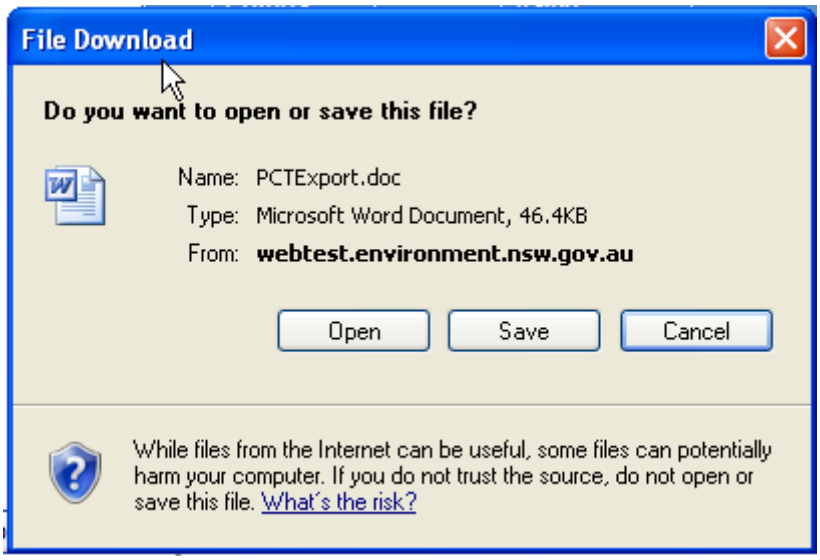
Choose the option you require by clicking on the relevant button. If you click 'Save', the directory window will open to allow you to choose where to save the file, and to rename the file as desired.



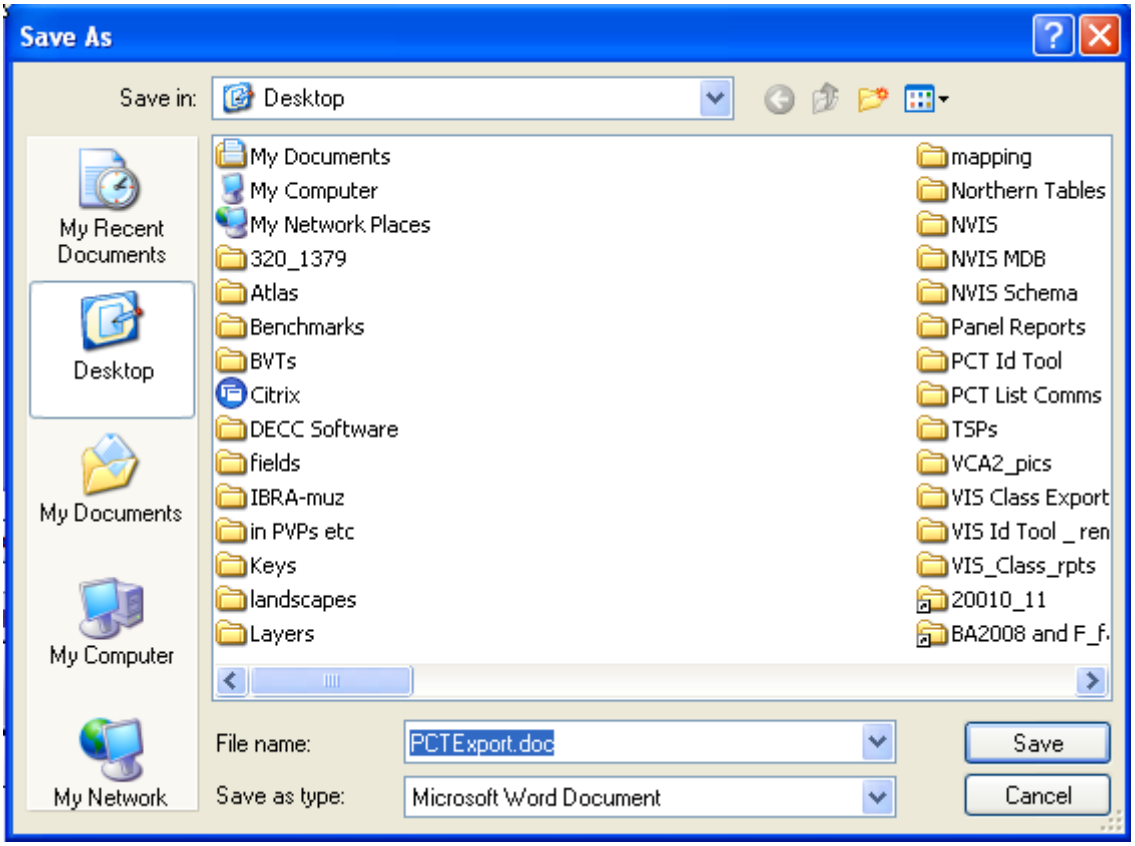
Click ‘Save’ to save the file according to the selections you have made.

If you click ‘Open’ in the previous step, the file will automatically open in the default application you have set for opening csv files, e.g. MS Excel.

To export as a MS Word file, click the ‘Export to Word’ icon or text area. A Save dialogue will open as shown below.



Choose the option you require by clicking on the relevant button. If you click ‘Save’, the directory window will open to allow you to choose where to save the file, and to rename the file as desired.

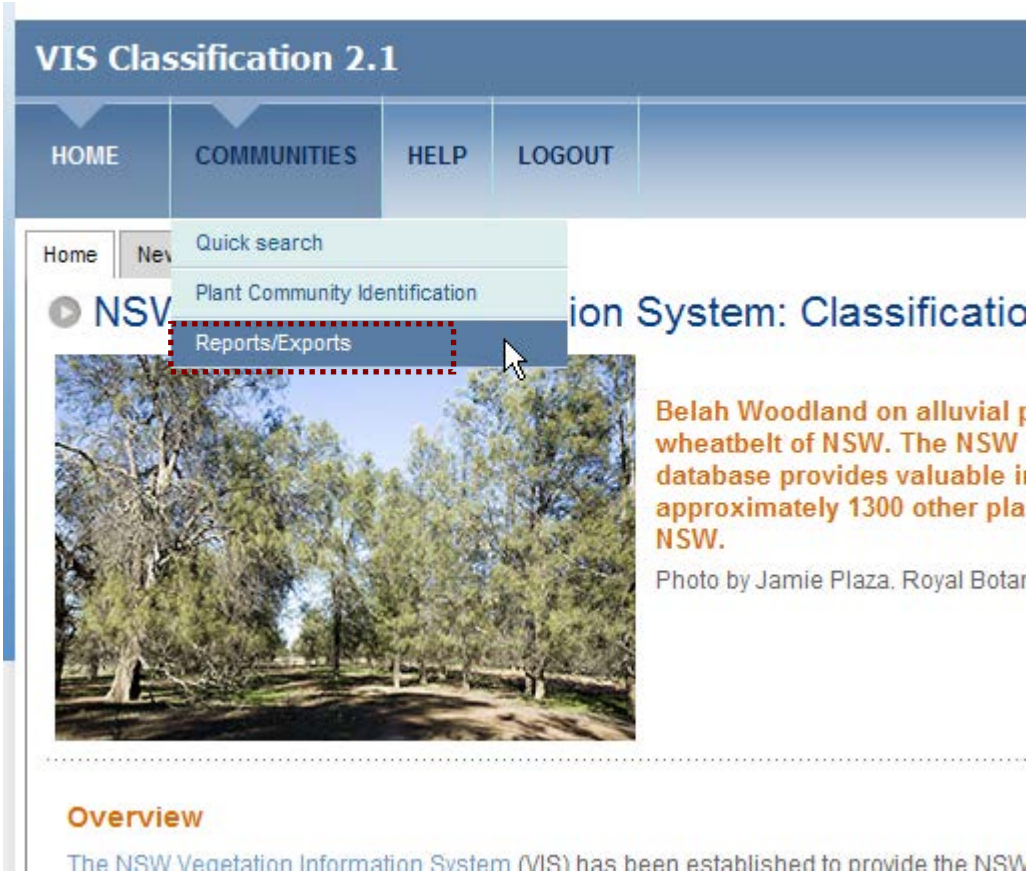


Click ‘Save’ to save the file according to the selections you have made.

If you click ‘Open’ in the previous step, the file will automatically open in the default application you have set for opening doc files, e.g. MS Word.

9.0 Reports and Exports

To export data or produce reports of data for plant community types (PCTs), choose the **Reports/ Exports** option from the drop down menu under the Communities drop down menu, as shown below.



Clicking on the **Reports/ Exports** menu item opens the screen below.

Please read the information at the beginning of the search page, and in the following sections to understand the nature and limitations of search options for both exporting and reporting data.

9.1 Options for Searches (Exports and Reports)

Only some fields in the VIS Classification database have been fully populated for all plant community types (see below).

The fully populated fields are suitable for state-wide searches, and will return a complete list search result. Search using these fields only if you require a comprehensive list of available plant community types, i.e. all plant community types across the state that match your search criteria. The list of the fully populated fields is:

- Plant Community Type ID
- BioMetric Vegetation Type ID
- Common name
- Scientific name

- Vegetation Class (Keith 2004)
- Vegetation Formation (Keith 2004)
- Catchment Management Authority (CMA)
- Upper Stratum Species
- Mid-story stratum species
- Ground stratum species
- PCT Listing Status
- Dominant canopy species
- Main associated species
- Landscape position
- Other diagnostic features
- Cleared estimate (% of CMA cleared)
- Threatened Ecological Communities (TEC) Listed communities
- Community Benchmark data
- References

The remaining fields in the VIS Classification database are incompletely populated so searches may retrieve only partial results of plant community types. In particular, the data for plant community types along the eastern ranges and coastal areas of NSW are restricted, and there may be no data in any fields other than the state-wide fields listed above. If this is your area of interest, you are advised to use the State-wide Search above.

The coverage of full field data for the western portions of the state is good, so if your area of interest is in these regions, you can search using the full range of fields available. The data coverage map in Figure 1 shows the area covered by the full list of fields. If you want to undertake a search using the additional fields, aware of the potential limitations on results, you can use the Full Field Search option.

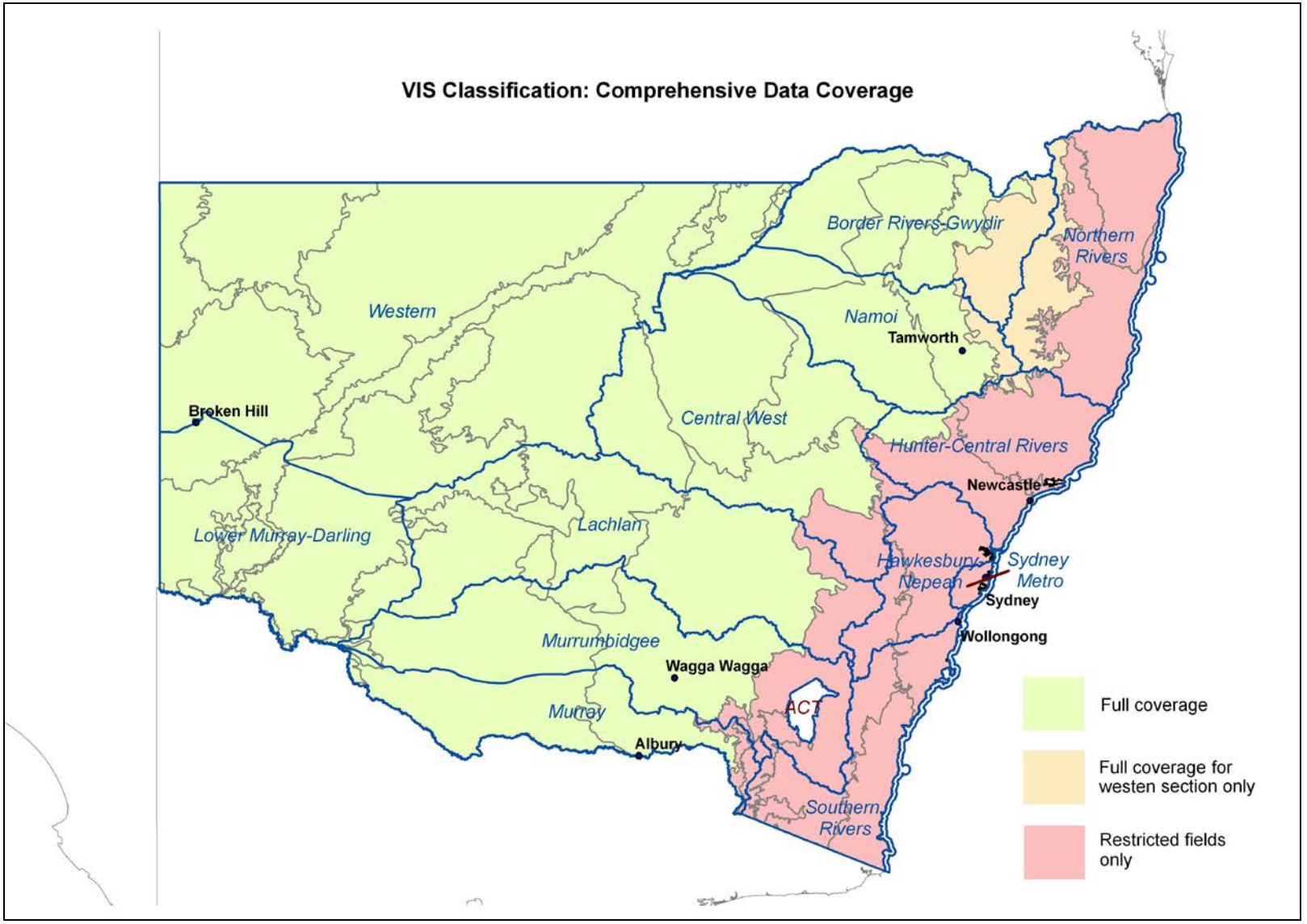


Figure 1: Current coverage of full data fields in VIS Classification (CMA over IBRA bioregional boundaries). Comprehensive data are only available for the green region. Only the western portion of the New England Tablelands (orange region) is fully covered. Only state-wide searches (i.e. searches restricted to using state-wide fields) will ensure retrieval of all communities in the pink region and the eastern portion of the New England Tablelands.

Please click on the hyper-linked text to the **Report and Export Search Options** on the search page for further information.

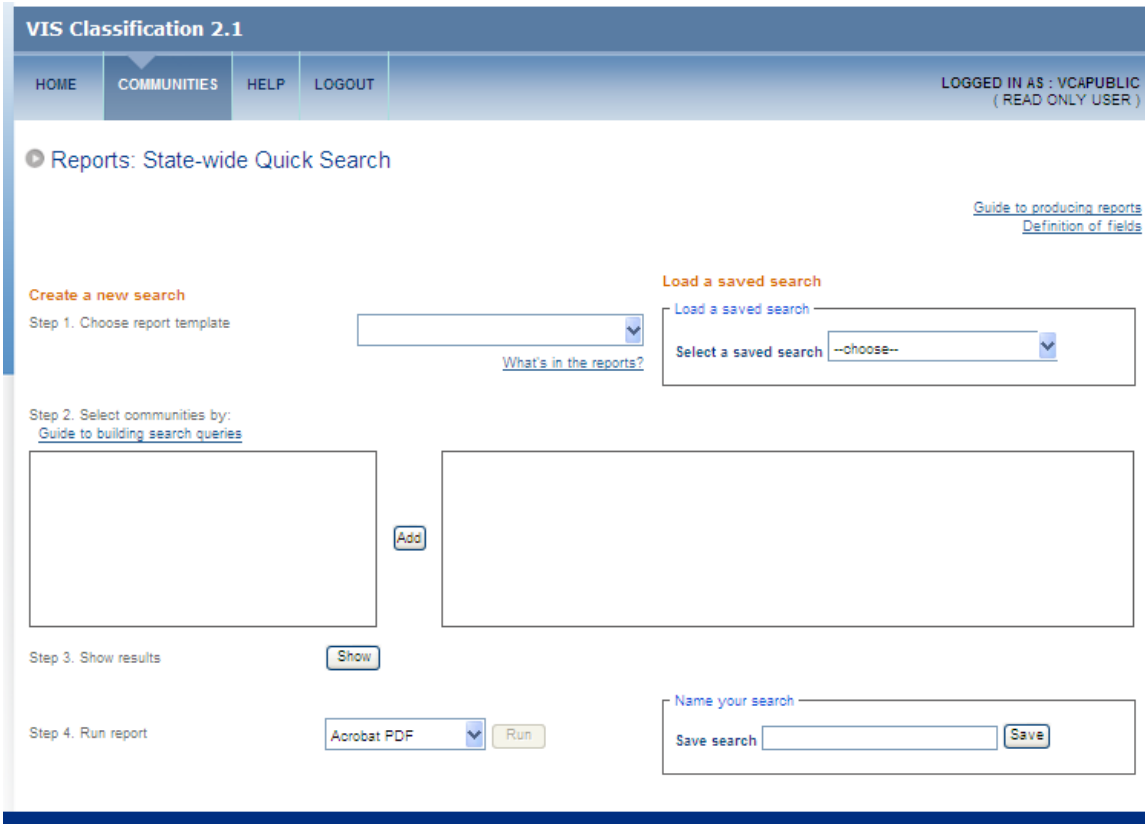
For both options, you will be able to further choose ‘Quick Search’ or ‘Advanced Search’ Reports or Exports. The ‘Quick Search’ option provides a quick means to export data or produce a report via a set of templates. Further information on the types of templates available is provided via the **What’s In The Reports?** hyper-link on the search page. The ‘Advanced Search’ Reports and Exports options enable you to further design your reports and exports via a larger set of query terms and the ability to select which fields will be displayed or produced.

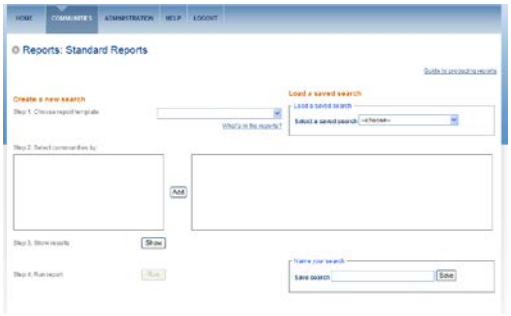
Once you have chosen a ‘State-wide Searches’ or ‘Full Field Searches’ option, please choose whether you want the ‘Quick Search’ Report or Export or, if you wish to customise your search, choose the ‘Advanced Search’ Report or Export.

N.B.: As the search routines are the same whether you are looking to export data or produce a report the following instructions apply to both. Please use the **Guide to producing reports** link to access either the **Guide to Producing Standardised Reports** (for Quick Searches) or the **Guide to Producing Customised Reports** (for Advanced Searches) as relevant for further information for either exports or reports.

9.2 Quick Search Reports (and Exports)

Select the ‘State-wide Searches’, ‘Reports’ and ‘Quick Search’ options to open the page shown below.

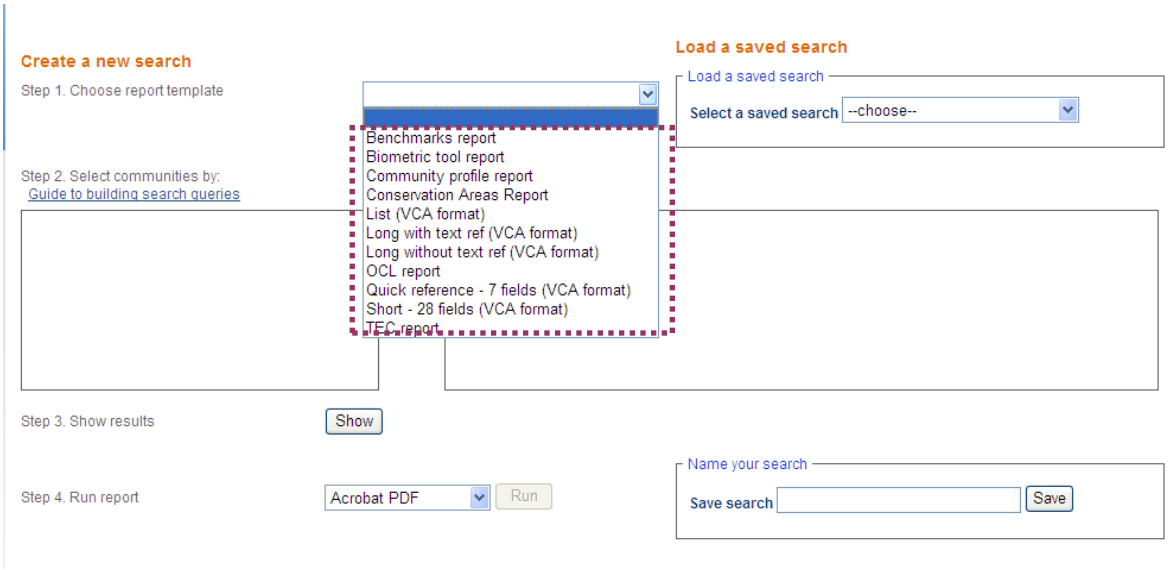




The steps to produce a Quick Search Report are provided below. The same process is followed for State-wide and Full Field searches.

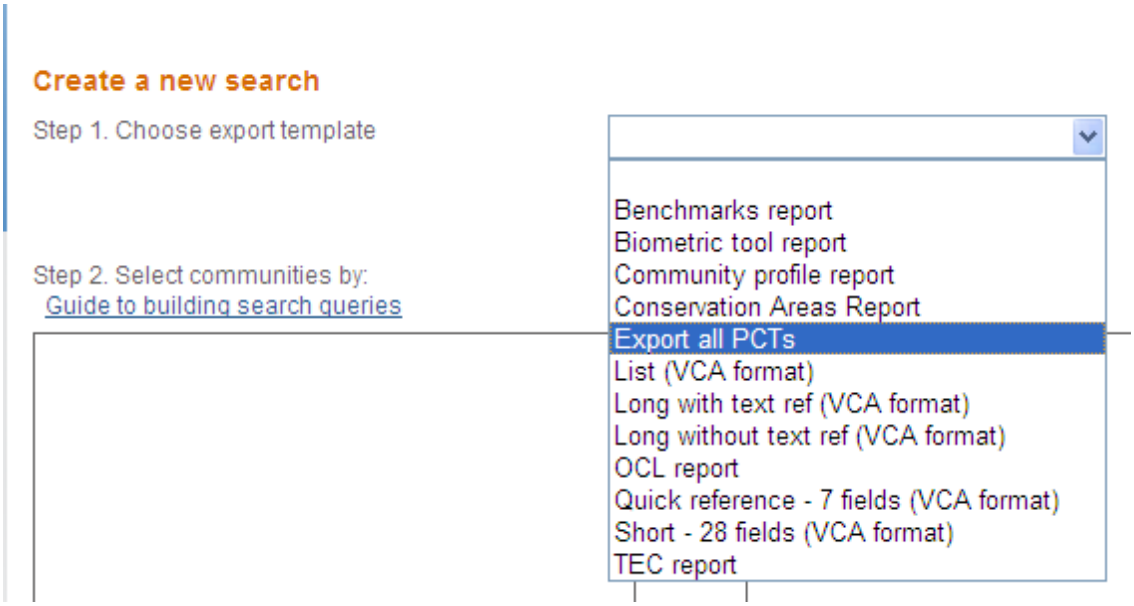
9.2.1 Step 1: Choose Report Template

Select the report template you want from the drop down menu, as shown below.



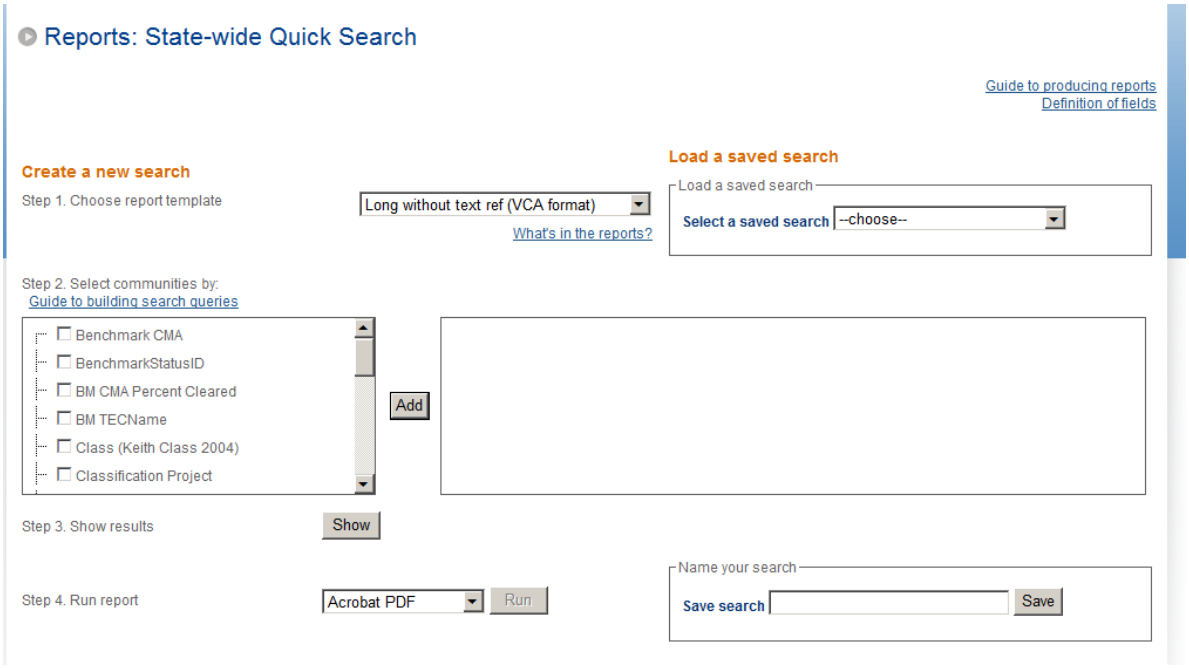
Information on the report templates is available via the '**What's in the reports?**' hyper-linked text on the search page (under the template selection field).

If you are exporting, there is an additional template available - to '**Export all PCTs**' (i.e. export all plant community types), as shown below.



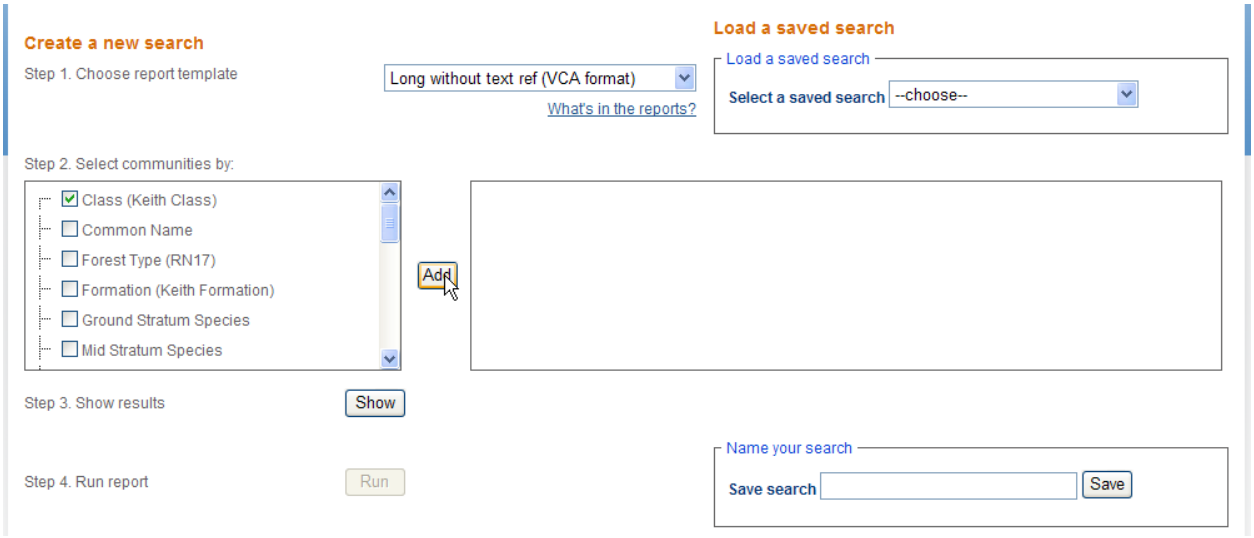
This option will export all fields in the standard format for all listed plant community types.

When the desired report template has been selected, the relevant fields will be loaded into the '**Select communities by**' field boxes in Step 2, as shown below (example below is for the Long without ref text (VCA Format) template).

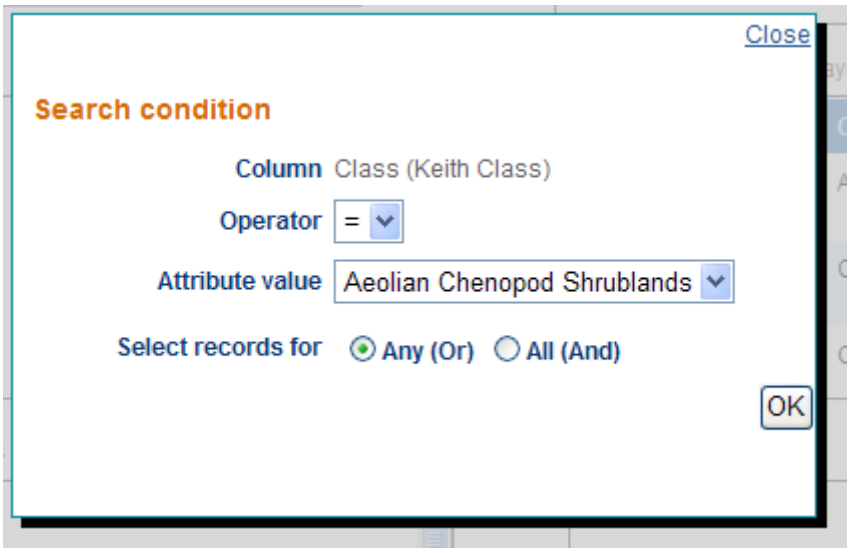


9.2.2 Step 2: Select Communities

Select a criterion by clicking the check box next to the field name you want to add, as shown below (using 'Class (Keith Class)' as the example):

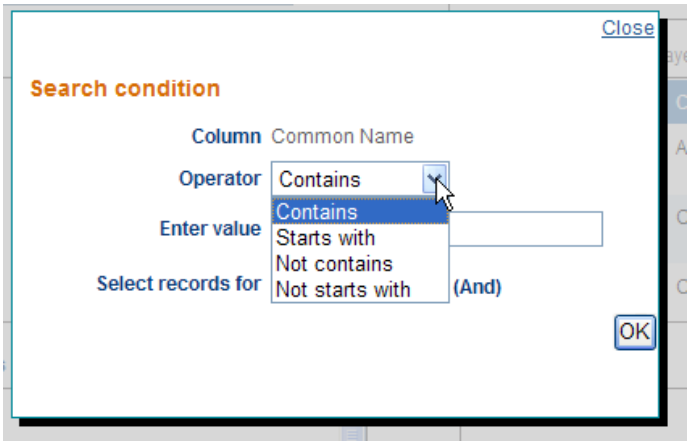


When you have selected a field, click '**Add'** to add it to the search criteria. This opens the Search condition page as shown below.

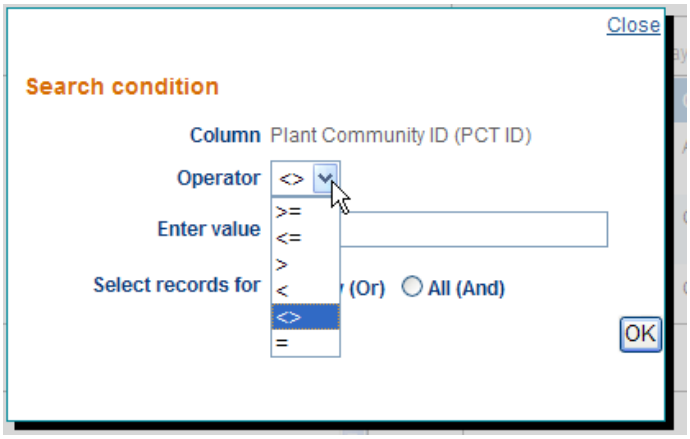


Click on the 'Operator' drop down menu to view and select the options. These will vary according to the type of data in the relevant field. Options are shown in the sequence below:

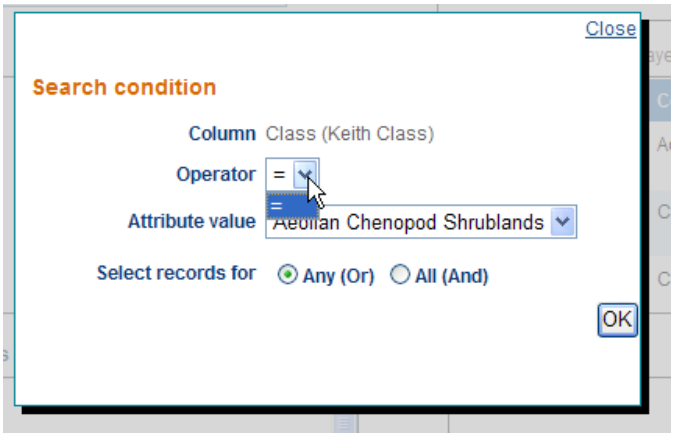
Text based fields:



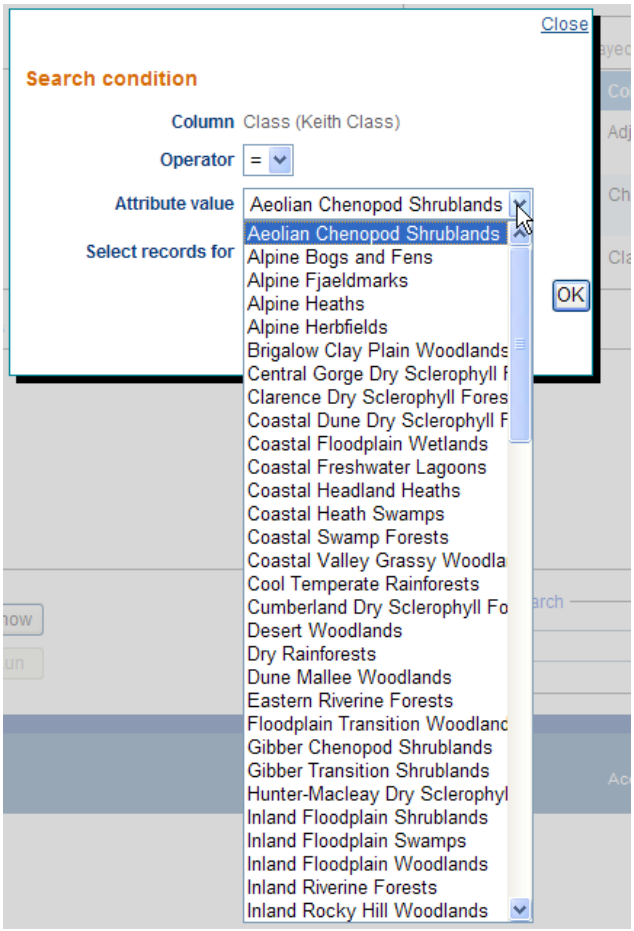
Numeric fields:



Look up Tables fields:

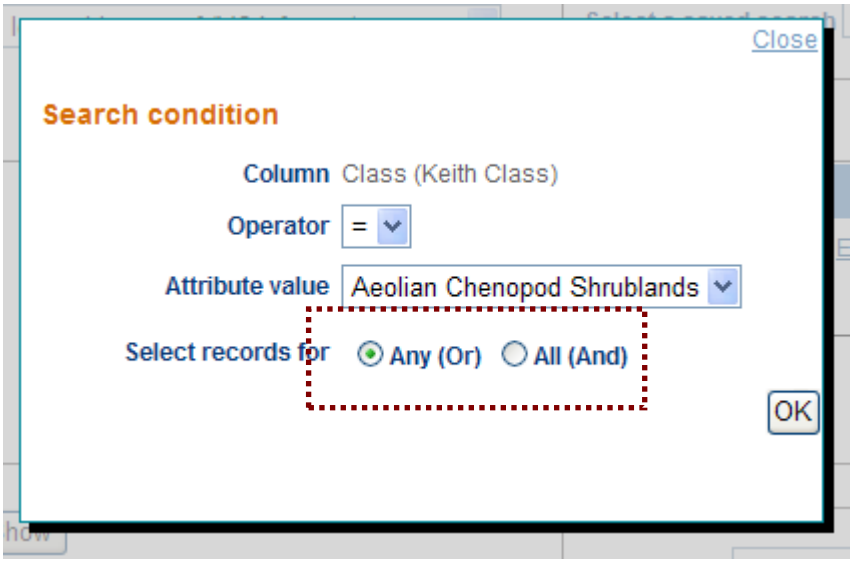


When you have selected the operator, select the attribute value from the drop down menu next to the field, as shown below.



Select the term you want by clicking once on the relevant entry.

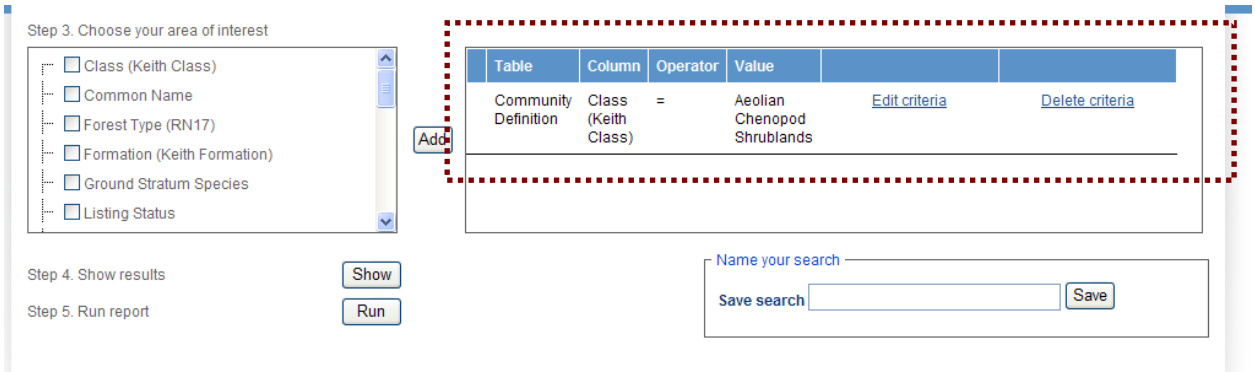
When you have selected the term you want, select the type of operator you want applied for this criterion, either ‘Any (Or)’ or ‘All (And)’, as shown below. If you are using only one criterion, this term is not relevant.



Please note that the '**Select records for**' terms operate between the criteria, so that selecting '**Any (or)**' will include communities that meet either of the criteria, while '**All (And)**' will include only communities that meet both criteria simultaneously. For example, for criteria of Common Name contains gum and Class (Keith Class) = Alpine Heaths, the operator '**Any (Or)**' will retrieve all communities where 'gum' occurs in the Common Name field, in addition to all communities where the Class (Keith Class) field is Alpine Heaths. This will retrieve hundreds of communities. Using the '**All (And)**' operator however will select only those communities where the Common Name contains 'gum' AND where the 'Class (Keith Class)' is Alpine Heaths. In this case, no communities are retrieved as no communities match BOTH criteria.

Please also note that the order of criteria is crucial to getting the result you want, as the first criteria creates a subset to which the second criteria is matched. Using the same criteria and swapping their order can therefore produce different results.

When you have selected the term and operator, click **'OK'**. The Search condition screen should now show your choices, as shown below.



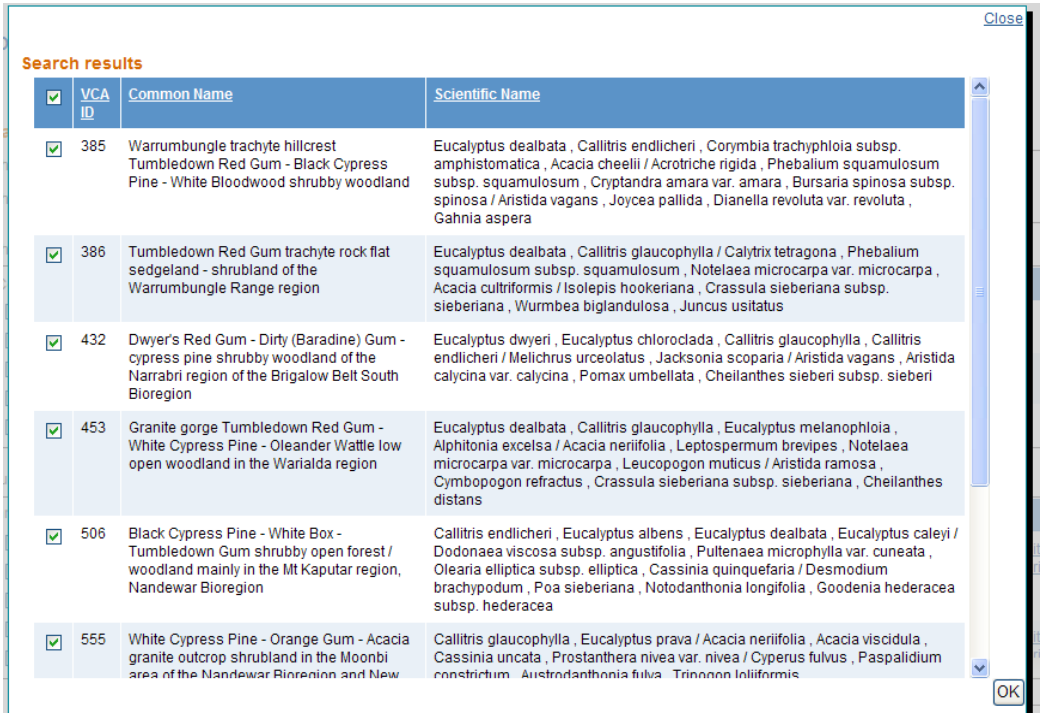
Please note that if you use the **BioMetric Vegetation Type** code as a search term, the code must be the two alpha- three numeric format, e.g. **ME056** NOT ME56 (which would retrieve nil results).

Continue to build your criteria by selecting additional field/s in Step 2. For each field, '**Add'** it to open the Search condition page for each field. You may edit or delete a criterion at any time by using the '**Edit criteria**' or '**Delete criteria**' options to the right.

Handy Hint: As you compile criteria, please check the **'Run'** button in Step 6 at the bottom of the screen. This, in effect, previews whether the current combination of criteria match at least one plant community type. If the **'Run'** button is greyed out, there are no plant community types that meet the current combination of criteria. If this is the case, clicking **'Show'** will retrieve no matches, so you will need to alter the criteria.

6.2.3 Step 3: Show results

When you are happy with your criteria selection, click the 'Show' button. This opens a list of the plant community types that are matched to your criteria, as shown below.

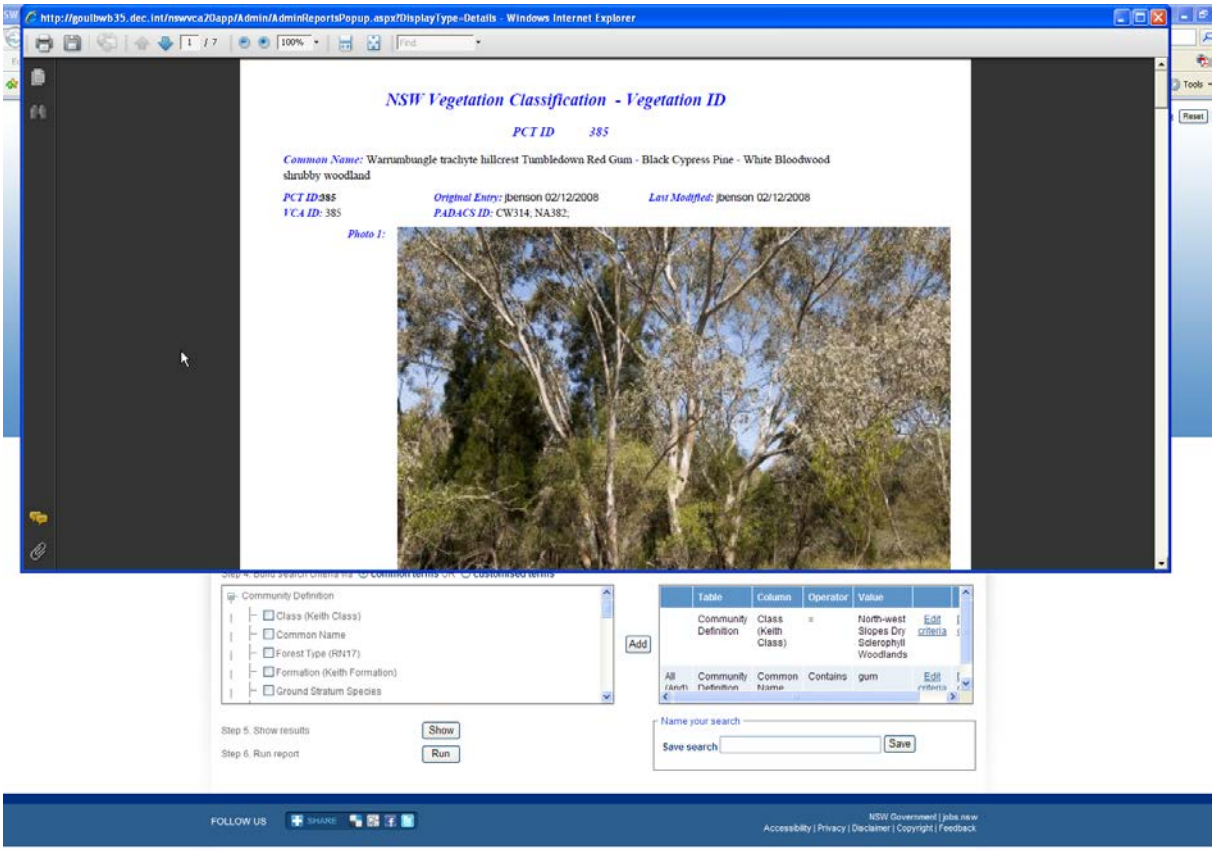


By default, all the matching types are shown checked, i.e. they will be in the report. You may need to scroll down the page to see the full list of communities. To modify, either uncheck individual communities in the list, or uncheck the top check box next to the VCA ID column header to deselect all communities. You can then reselect any by clicking individual communities or recheck all. When you are happy with the plant community types selected, click ‘OK’ to save these as the ones to be run in the report. Click ‘Close’ if you don’t want to save your changes. Please note however that this will revert back to the default position, i.e. all communities matching the selection criteria will appear in the report.

9.2.4 Step 4: Run report

When you are ready click **‘Run’** to produce the report. Please note that depending on the size of the report (i.e. number of communities selected and number of fields/columns to be displayed) this may take some minutes.

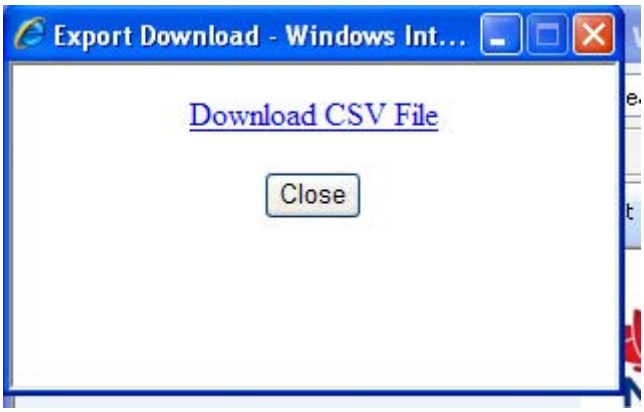
When the system and server have processed the request, the report will be displayed on screen in a separate window, as shown below. (If you are exporting, details are immediately below the report description below).



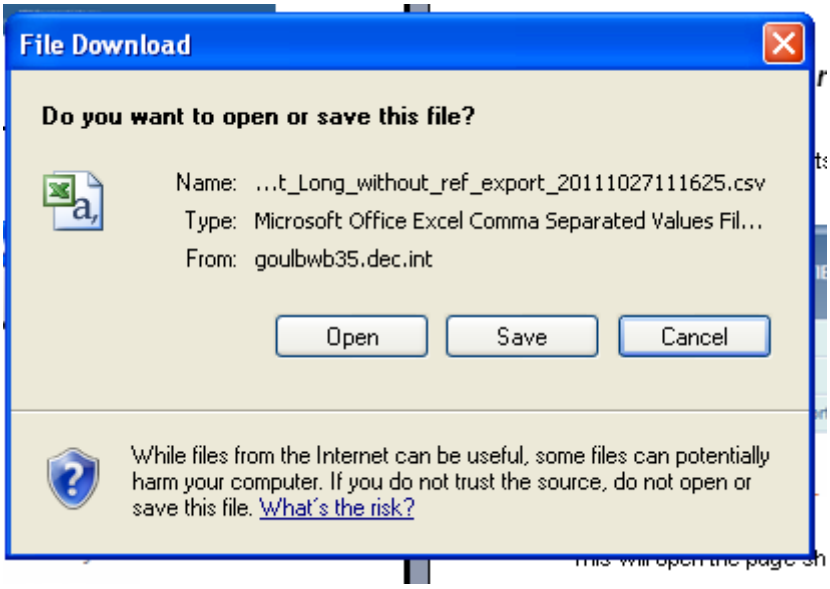
N.B.: The preview of reports appears as a new pop up screen. For this to function, please ensure that 'block pop ups' is not turned on. Refer to Section 3. Possible Technical Issues, above, for instructions how to turn off the pop ups block.

You can review the report in this screen, then close it if you don't want to save or print the report, or elect to save or print via the two icons in the top left hand corner of the report screen (as shown below.)

If you are exporting, when you click **'Run'** the following pop up will appear:



Click **'Download CSV File**' to save the export file. The dialogue for saving as shown below will appear. Clicking **'Close'** will cancel the operation.

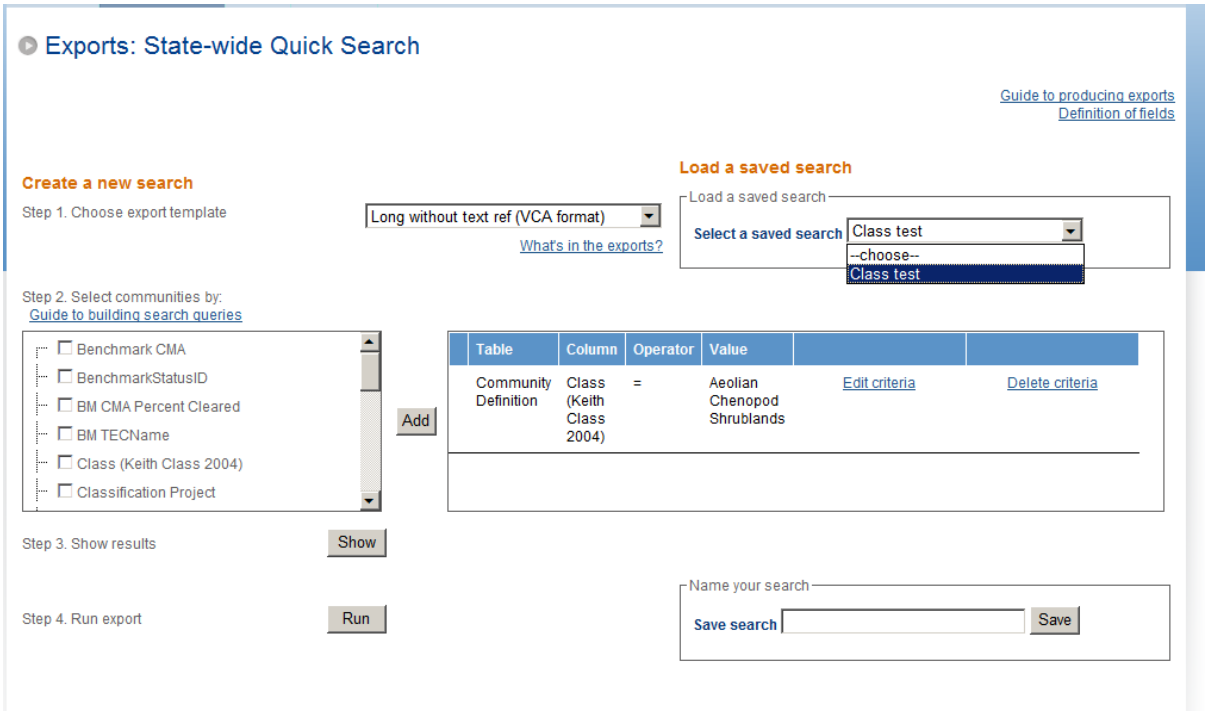


Either **'Open'** or **'Save'** the file as relevant. '**Cancel'** will Cancel the operation, but the Download CSV dialogue box will remain.

9.2.5 Saving Report Criteria

Once you have created your search, you can save the search set up to retrieve and run later, thus obviating the need to create the search again. To do this, give the current search set up a name in the '**Name your search**' box on the right, then click '**Save'**. This will save the set up to your log in, i.e. only you have access to this saved search.

To retrieve the saved search, select it from the '**Load a saved search**' box in the top right, by selecting it from the list and clicking once on the relevant saved search, as shown below.



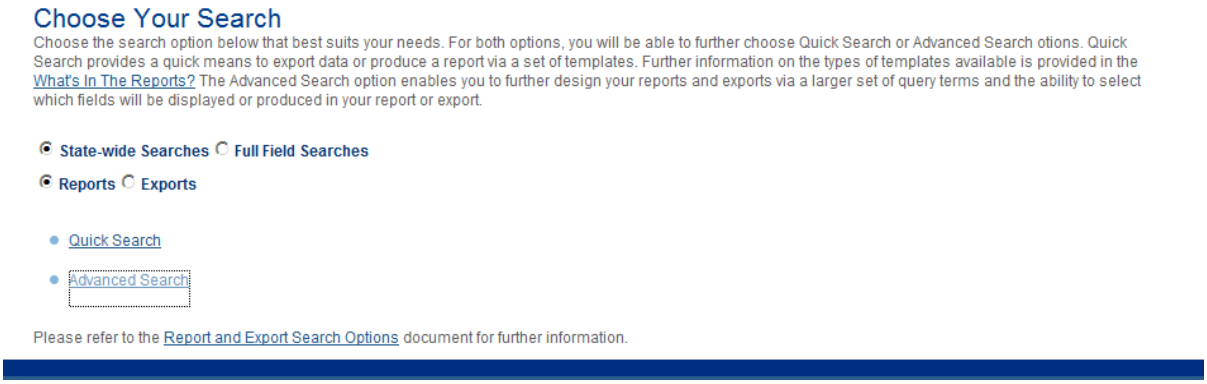
This will automatically populate the fields for the search as they were saved to that name.

To modify an existing saved search, retrieve and load it, make your changes then save it using the same name. This will overwrite the existing saved set up.

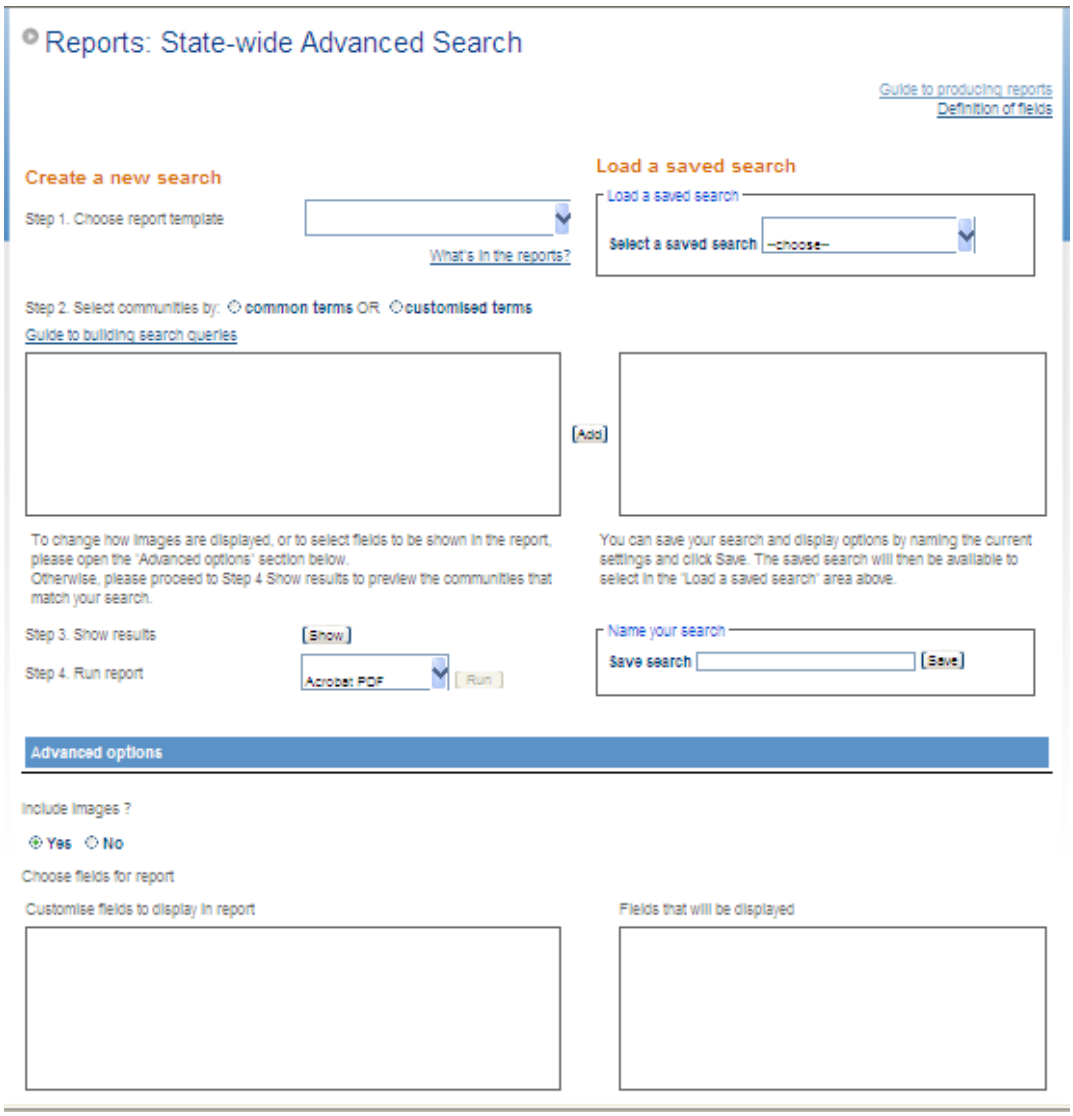
You can create multiple saved searches, but remember to change the saved name if you do not want to overwrite an existing saved search.

9.3 Advanced Search Reports (and Exports)

When Choosing your Search, select the Advanced Search option:



This will open the page shown below.

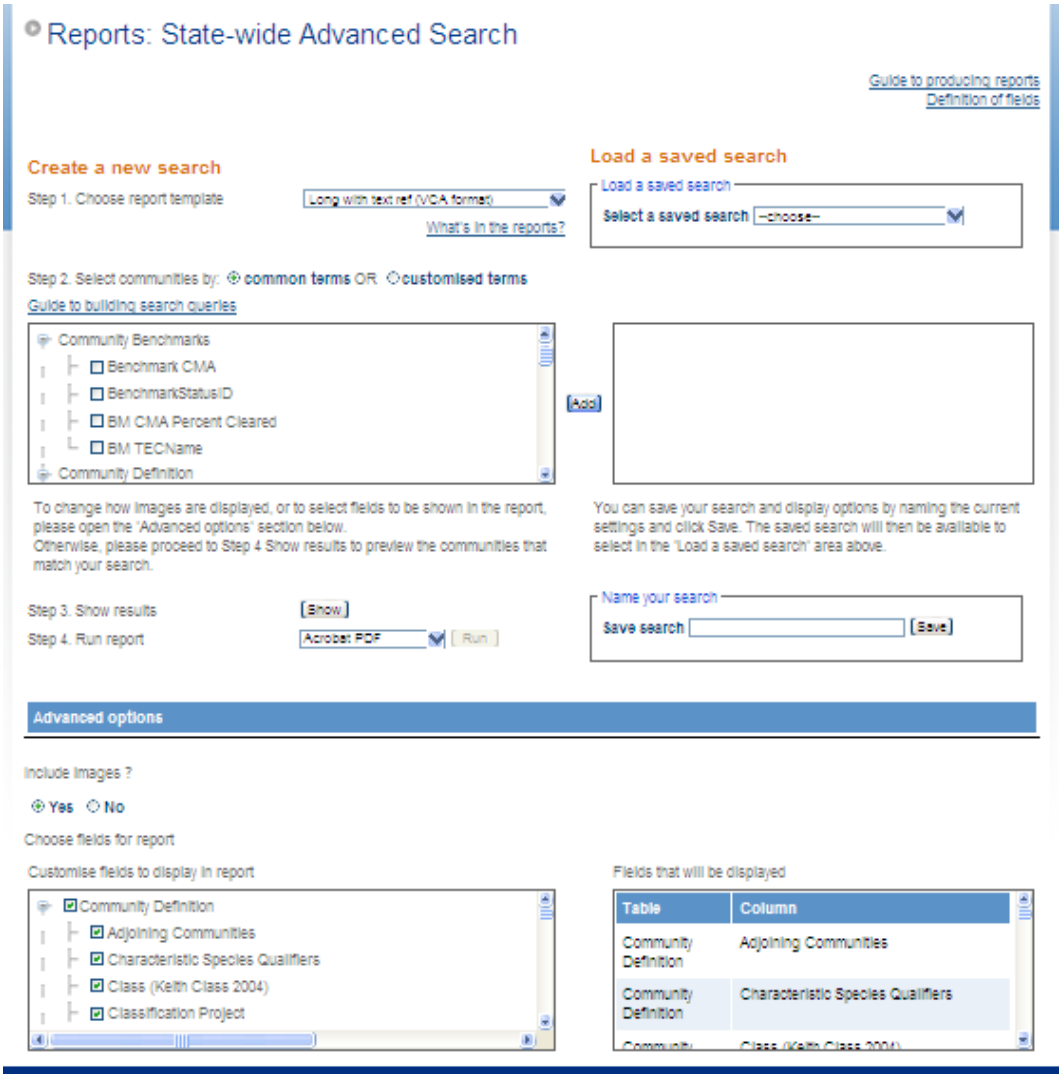


The steps to undertake an Advanced Search are provided below.

9.3.1 Step 1: Select Report Template

Information on the report templates is available via the '**What's in the reports?**' hyper-linked text.

When the Template is selected, the relevant fields for the selected report template are loaded into the '**Select communities by**' field boxes in Step 2, as shown below (example below is for the Long without ref text (VCA Format) template). Also note that the appropriate list of fields will be populated into the '**Advanced options**' area at the bottom of the page.

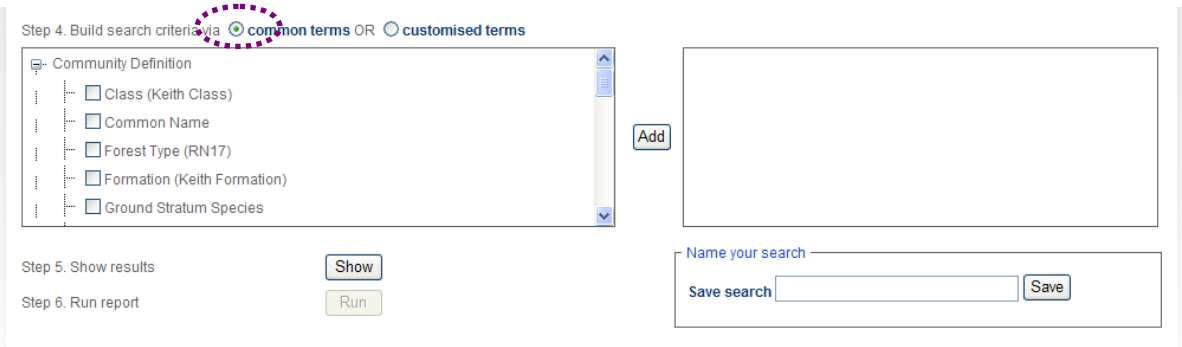


By default, the selection in the **'Select communities by'** field box will show the 'common terms' option, with all fields unchecked.

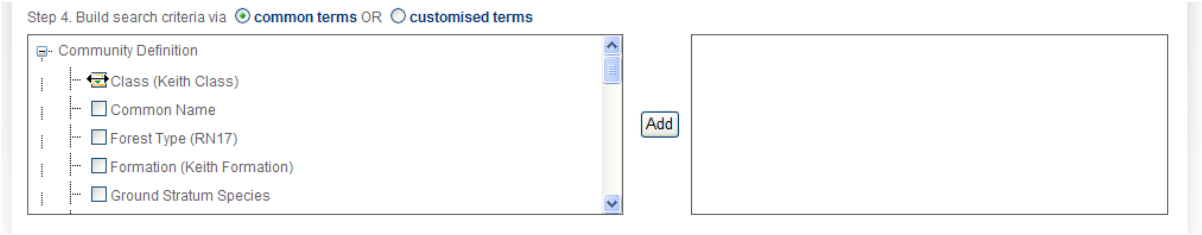
9.3.2 Step 2: Select Communities

There are two ways to compile your search query, i.e. criteria that the system will use to retrieve the relevant plant community types.

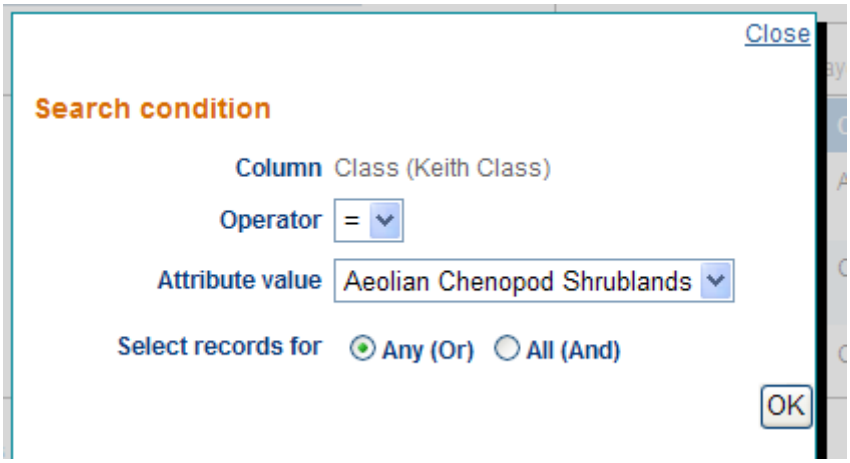
By default, the '**common terms**' method is active. This method presents a subset of the total number of fields and tables in the database, representing the most commonly used terms. Please scroll down the list to see what fields are available.



When you are ready, please check one of the Column boxes, as shown below.

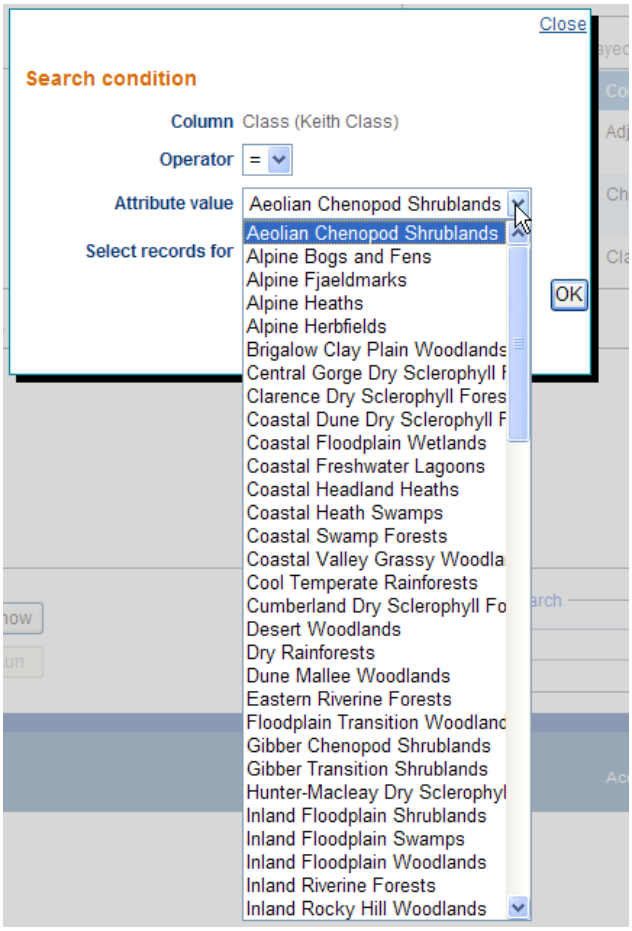


The **'Add'** button should now become active, i.e. no longer greyed out. Click the **'Add'** button to add the selected criteria to the open the Search condition page as shown below.



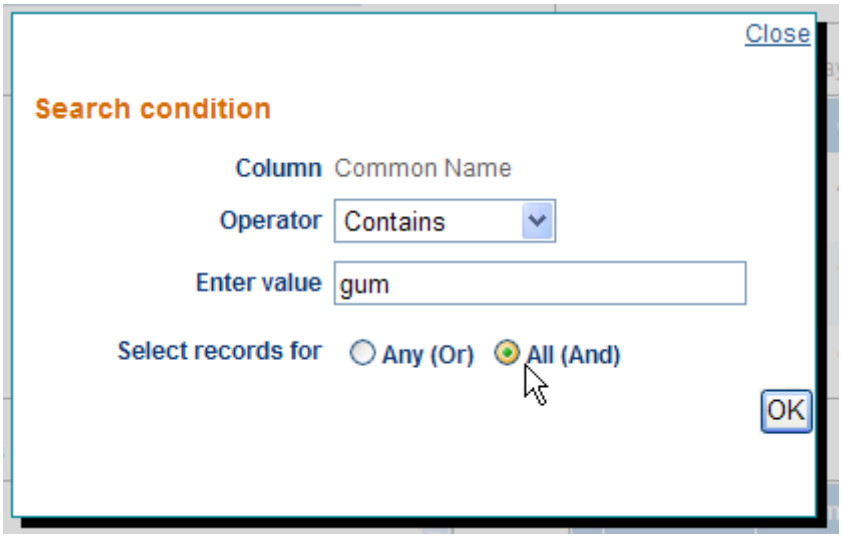
Click on the **'Operator'** drop down menu to view and select the options. These will vary according to the type of data in the relevant field. Options are detailed in 9.2.2 Step 2: Select Communities, above.

When you have selected the Operator, select the Attribute value from the drop down menu next to the field, as shown below.



Select the term you want by clicking once on the relevant entry. The Search condition screen should now show your choices.

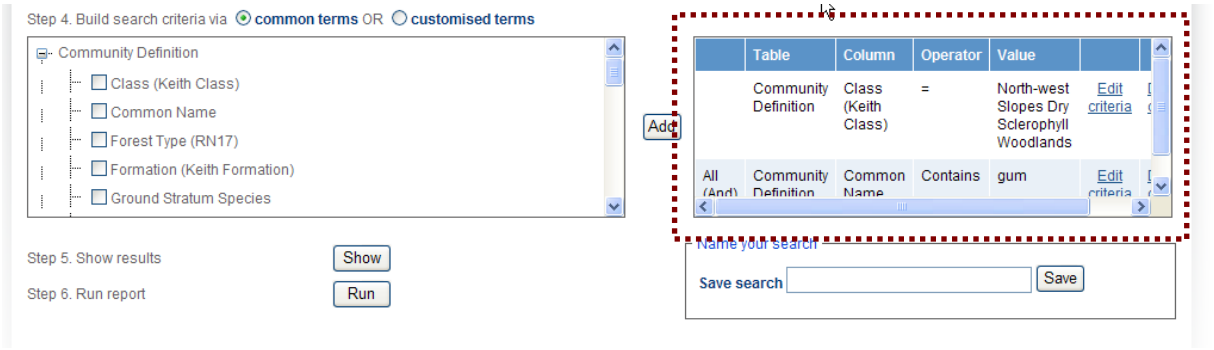
Select the type of operator you want applied for this criterion, either ‘Any (Or)’ or ‘All (And)’, as shown below. If you are using only one criterion, this term is not relevant.



Please note that the '**Select records for**' terms operate between the criteria, so that selecting '**Any (or)**' will include communities that meet either of the criteria, while '**All (And)**' will include only communities that meet both criteria simultaneously. For example, for criteria of Common Name contains gum and Class (Keith Class) = Alpine Heaths, the operator '**Any (Or)**' will retrieve all communities where 'gum' occurs in the Common Name field, in addition to all communities where the Class (Keith Class) field is Alpine Heaths. This will retrieve hundreds of communities. Using the '**All (And)**' operator however will select only those communities where the Common Name contains 'gum' AND where the 'Class (Keith Class)' is Alpine Heaths. In this case, no communities are retrieved as no communities match BOTH criteria.

Please also note that the order of criteria is crucial to getting the result you want, as the first criteria creates a subset that the second criteria is matched to. Using the same criteria and swapping their order can therefore produce different results.

Click OK to retain the criteria. The selected criteria should now appear in the field box to the right, as shown below.

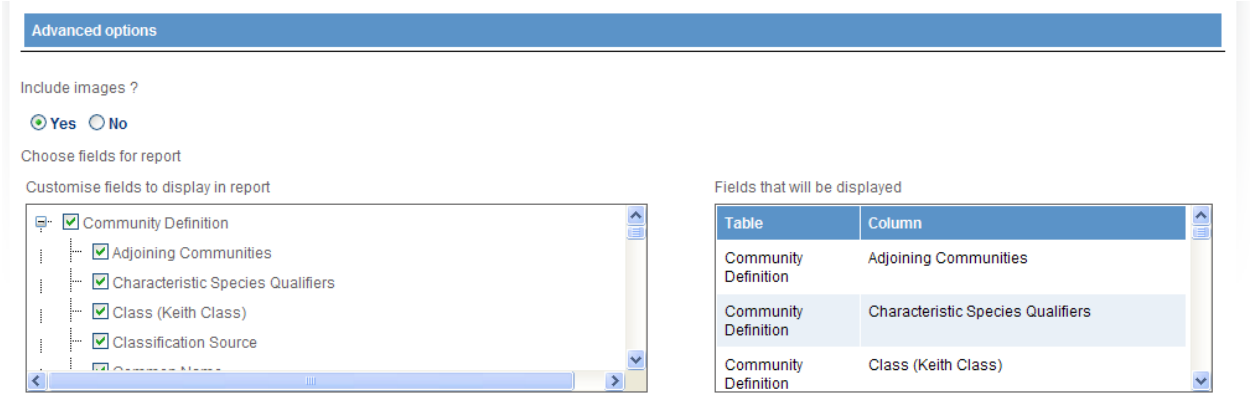


You can delete or edit the criteria in this compiling area by clicking on the '**Edit criteria**' or '**Delete criteria**' text separately for each criterion. The '**Edit criteria**' option will take you back to the Search condition screen with the current criteria shown. The '**Delete criteria**' will remove that criterion entirely from the compiled list.

Handy Hint: As you compile criteria, please check the **'Run'** button in Step 6 at the bottom of the screen. This, in effect, previews whether the current combination of criteria match at least one plant community type. If the **'Run'** button is greyed out, there are no plant community types that meet the current combination of criteria. If this is the case, clicking **'Show'** will retrieve no matches, so you will need to alter the criteria.

9.3.3 Advanced options

The 'Advanced options' area at the bottom of the screen provides additional functionality to: (i) choose to produce or not produce images in the report; and (ii) choose which fields will be displayed in the report.



Images options

Simply choose the option required under '**Include images?**' options, i.e. **Yes** to have images, **No** to not have images. Please note this option only applies to reports that have images in their template, e.g. long reports do, a simple list of communities does not. If the template you choose does not have images, then this does nothing.

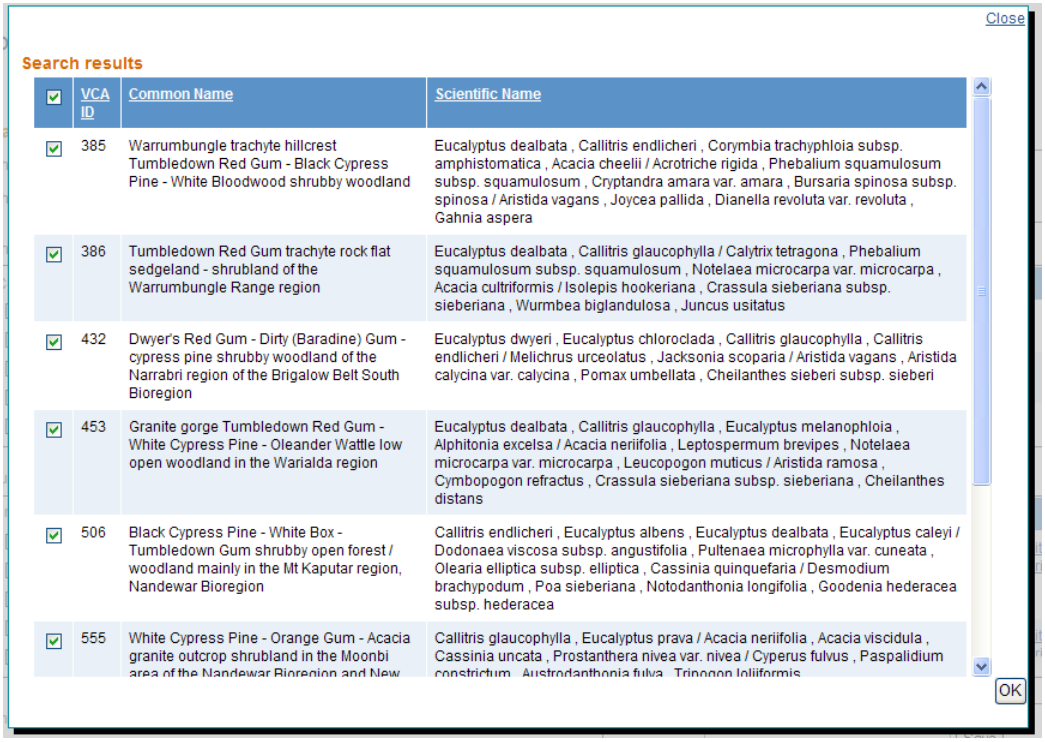
Fields to display

The '**Choose fields for report**' area provides a list of the fields currently set to be produced in the report. By default, all the fields are checked as 'on' as all fields in the template will be produced. You can simplify your report by turning off any number of fields. The fields are arranged according to the tables within the template. You can turn individual fields off (and back on) or turn off (and back on) all fields in the table, as shown below.

As you alter the display fields, the '**Fields that will be displayed**' box on the right will refresh to reflect the changes.

9.3.4 Step 3: Show results

When you are happy with your selection criteria, click the **'Show'** button. This opens a list of the plant community types that are matched to your criteria, as shown below.

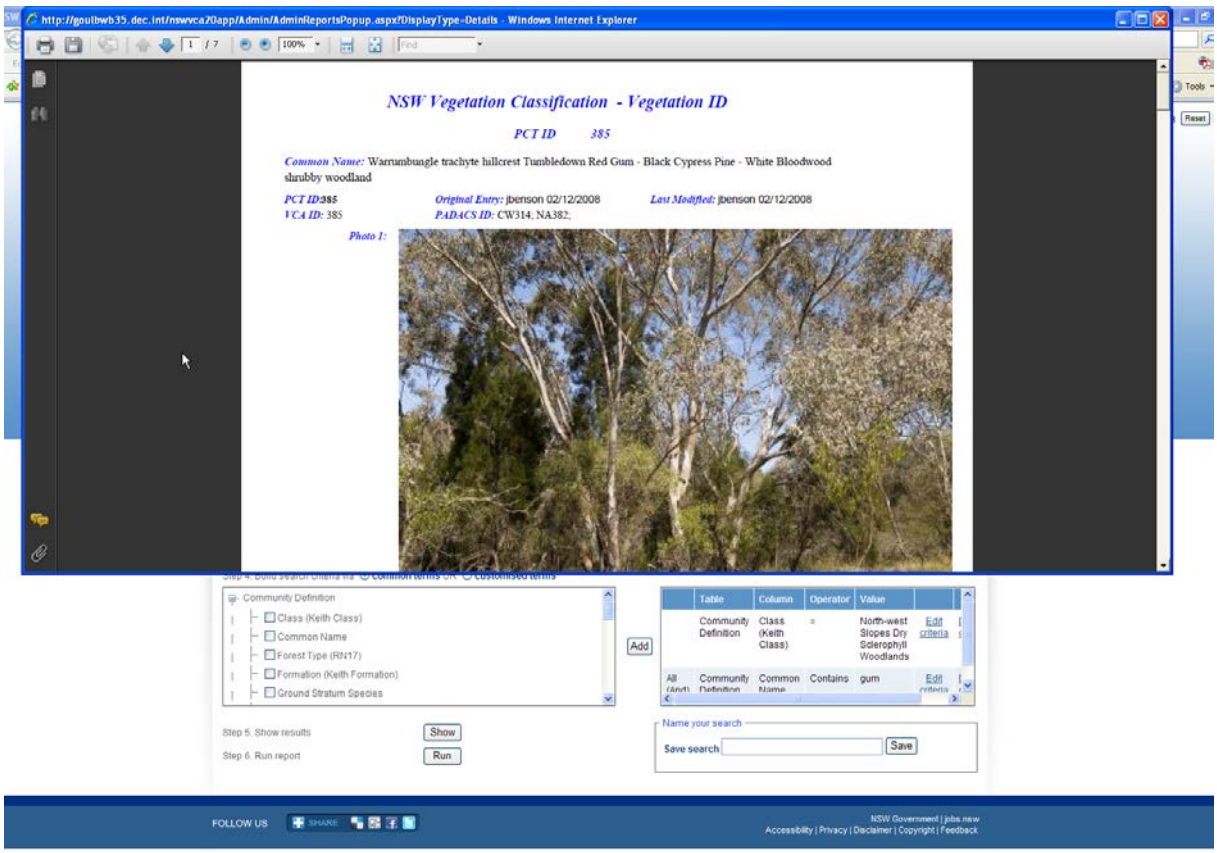


By default, all the matching types are shown checked, i.e. they will be in the report. You may need to scroll down the page to see the full list of communities. To modify, either uncheck individual communities in the list, or uncheck the top check box next to the VCA ID column header to deselect all communities. You can then reselect any by clicking individual communities or recheck all. When you are happy with the plant community types selected, click **'OK'** to save these as the ones to be run in the report. Click **'Close'** if you don't want to save your changes. Please note however that this will revert back to the default position, i.e. all communities will appear in the report.

9.3.5 Step 4: Run report

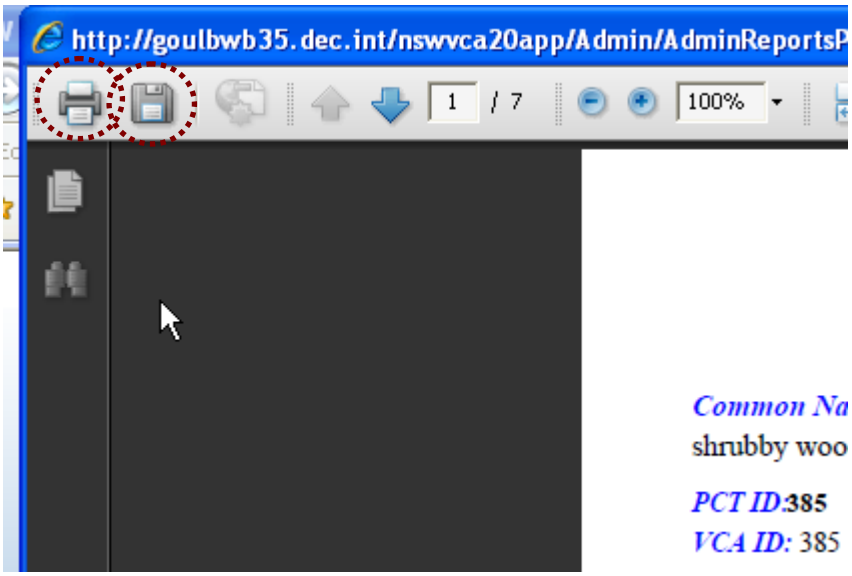
When you are ready click **'Run'** to produce the report. Please note that depending on the size of the report (i.e. number of communities selected and number of fields/columns to be displayed) this may take some minutes.

When the system and server have processed the request, the report will be displayed on screen in a separate window, as shown below.



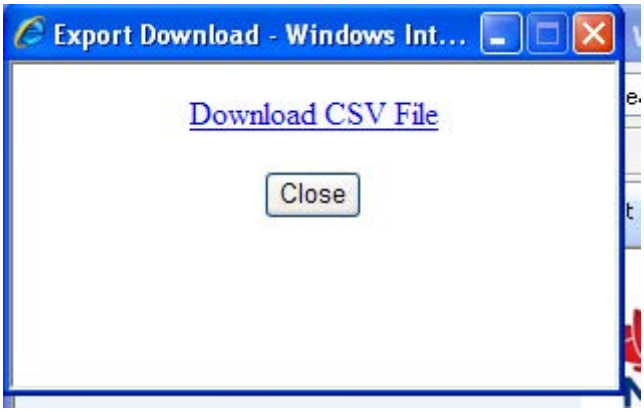
N.B.: The preview of reports appears as a new pop up screen. For this to function, please ensure that 'block pop ups' is not turned on. Refer to Section 3. Possible Technical Issues, above, for instructions how to turn of the pop ups block.

You can review the report in this screen, then close it if you don't want to save or print the report, or you can elect to save or print via the two icons in the top left hand corner of the report screen (as shown below).

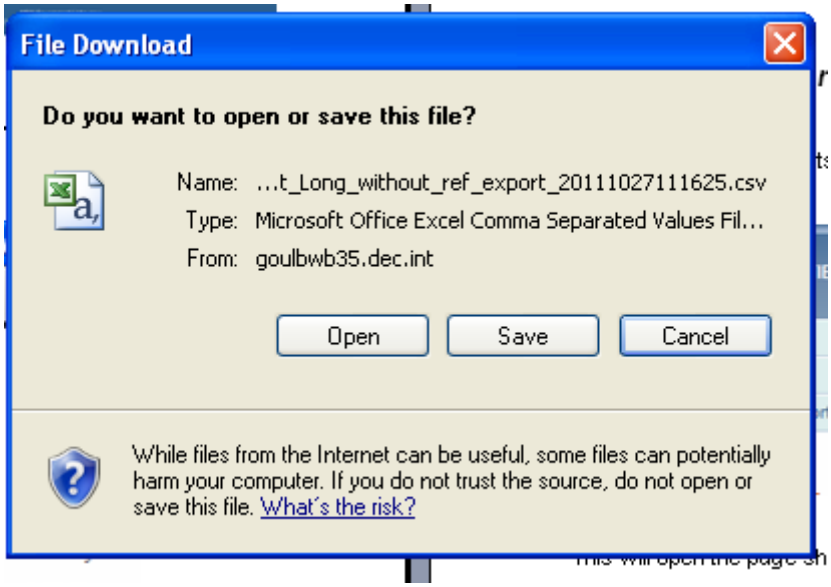


Run – Exports

If you are exporting, then when you click **'Run'**, the following pop up will appear:



Click **'Download CSV file**' to save the export file. The dialogue for saving as shown below will appear. Clicking **'Close'** will cancel the operation.

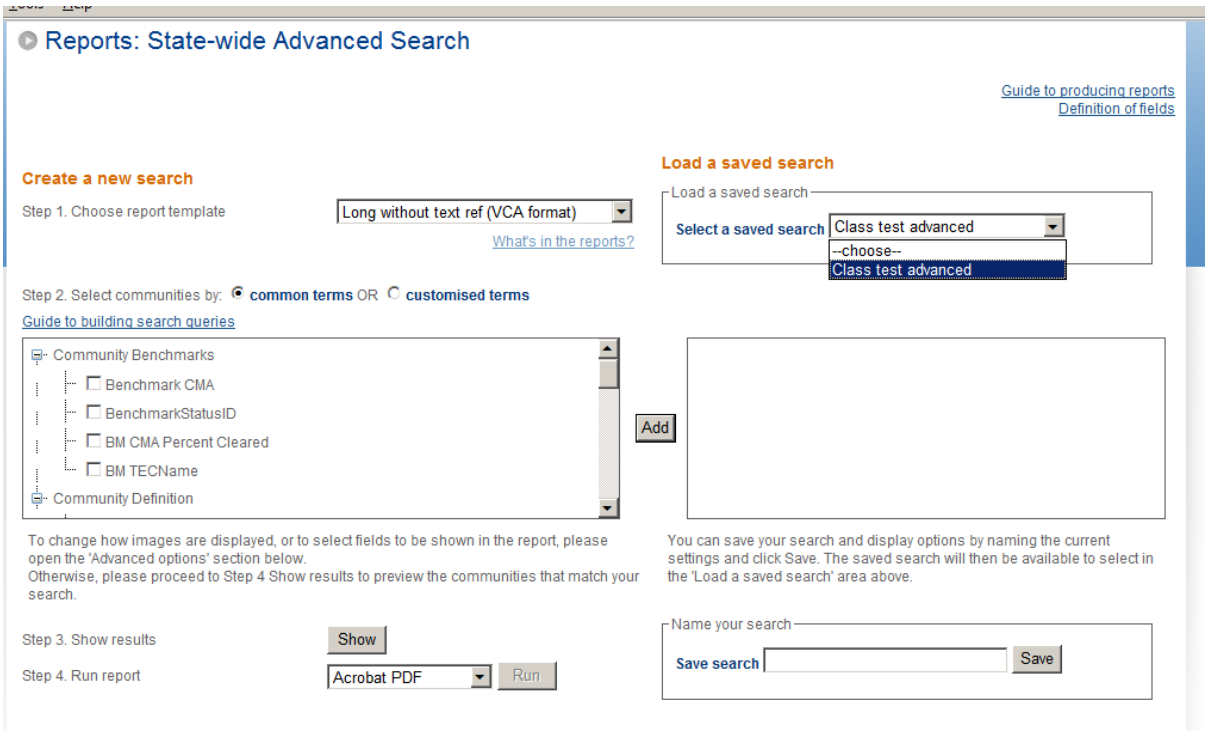


Please **'Open'** or **'Save'** the file as relevant. **'Cancel'** will Cancel the operation, but the Download CSV dialogue box will remain.

9.3.6 Saving Report Criteria

Once you have created your search, you can save the search set up to retrieve and run later, thus obviating the need to create the search again. To do this, give the current search set up a name in the '**Name your search**' box on the right, then click '**Save'**. This will save the set up to your log in, i.e. only you have access to this saved search.

To retrieve the saved search, select it from the '**Load a saved search**' box in the top right, by selecting it from the list and clicking once on the relevant saved search, as shown below.



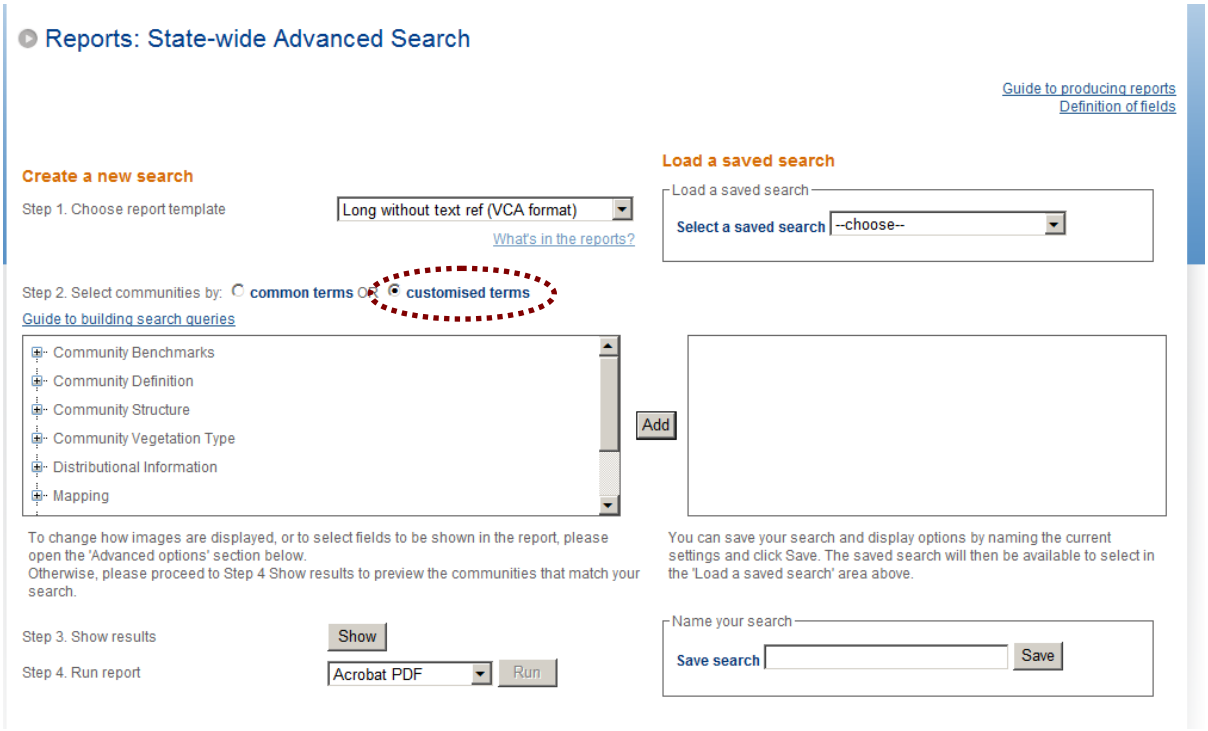
This will automatically populate the fields for the search as they were saved to that Search name.

To modify an existing saved search, retrieve and load it, make your changes then save it using the same name. This will overwrite the existing saved set up.

You can create multiple saved searches, but remember to change the saved name if you do not want to overwrite an existing saved search.

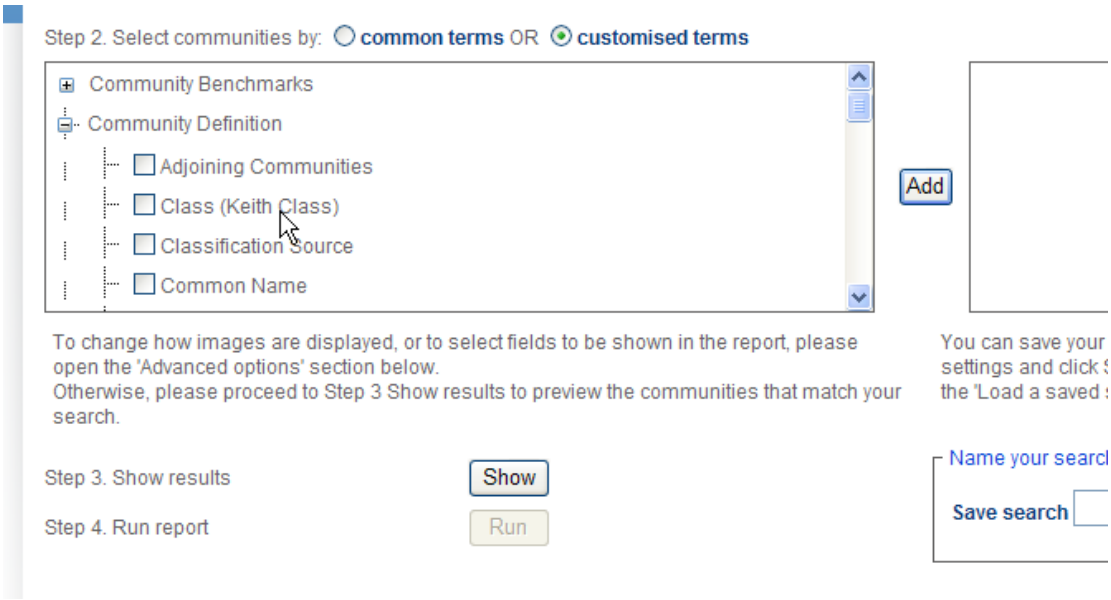
9.3.7 Customised Terms

The alternative approach to selecting communities for your reports or export is to customise the terms or criteria that are used in building your search query. To do this, click the radio button next to the **'customised terms'** option at Step 2, as shown below.



The list of fields directly below will refresh to display the full list of fields available to create your query. Please note that there are almost 200 fields in total so setting up your query may be time consuming. However you will be able to save and retrieve your query as part of a saved search once you have created it.

The fields initially are collapsed within the tables that the fields belong to. Click on the '**+**' symbol next to the category (table or field grouping) to expand it and see the fields contained therein (shown below).



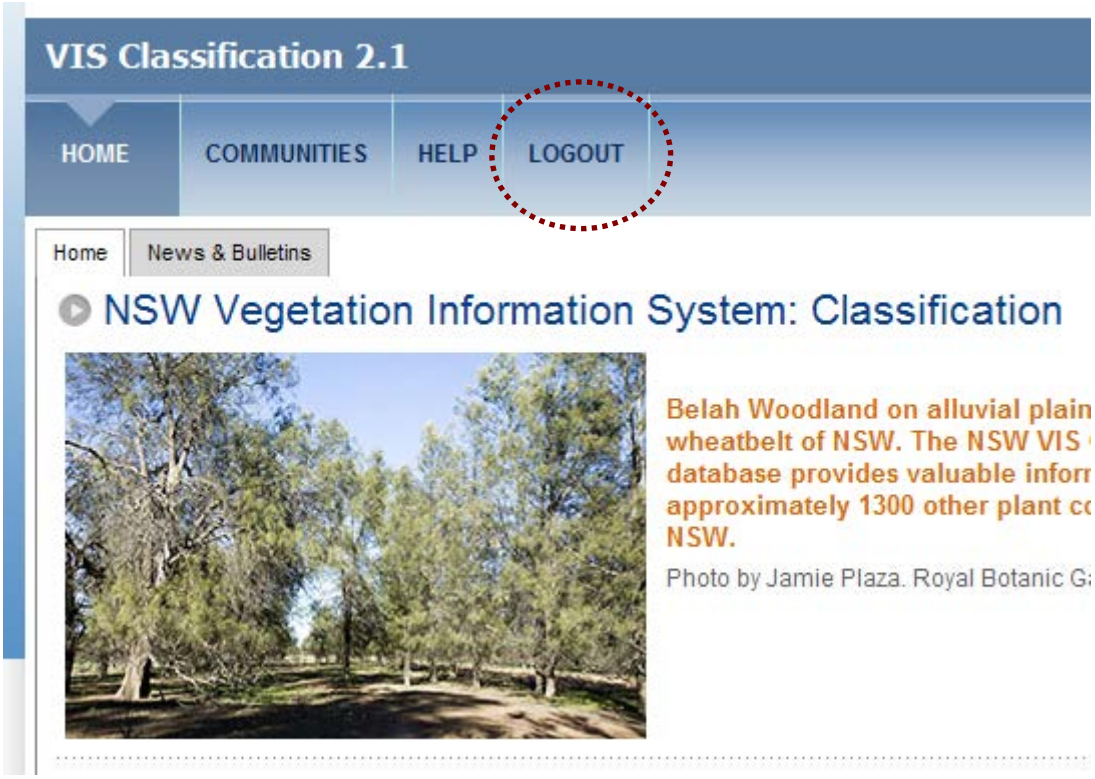
The process for selecting the terms is the same as described above in Section 9.3.2 Step 2 Select Communities above. Please refer to that section for instructions for building your query.

You can collapse a category at any time by clicking on the '**–**' symbol against an open category menu.

Definitions of the table categories (i.e. ‘terms’) and fields are provided via the hyper-linked **‘Descriptions of Terms (Tables and Field Definitions)’** document.

10 Logging Out

When you have finished your VIS Classification session, please remember to log out of the application by clicking the **‘LOGOUT’** tab.



References

Benson, J.S. (2006) New South Wales Vegetation Classification and Assessment: Introduction - the classification, database, assessment of protected areas and threat status of plant communities. *Cunninghamia* 9(3): 331-382.

Benson, J.S., Allen, C., Togher, C. & Lemmon, J. (2006) New South Wales Vegetation Classification and Assessment: Part 1 Plant communities of the NSW Western Plains. *Cunninghamia* 9(3): 383-451.

Benson, J.S. (2008) New South Wales Vegetation Classification and Assessment: Part 2 Plant communities in the NSW South-western Slopes Bioregion and update of NSW Western Plains plant communities, Version 2 of the NSWVCA database. *Cunninghamia* 10(4): 599-673.

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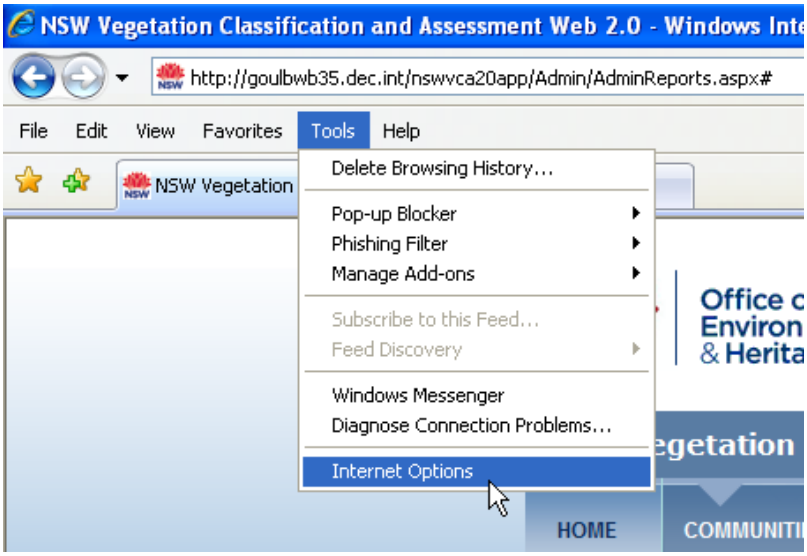
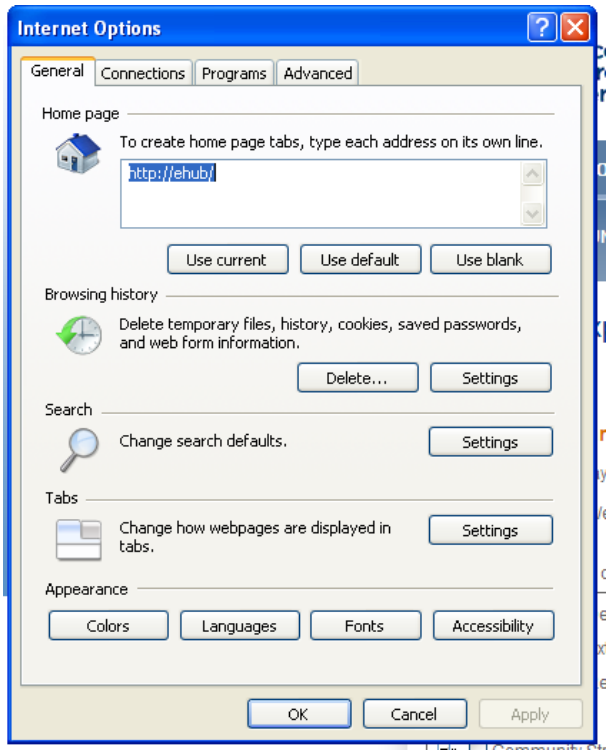
Attachment 1: Possible Internet Explorer Issues

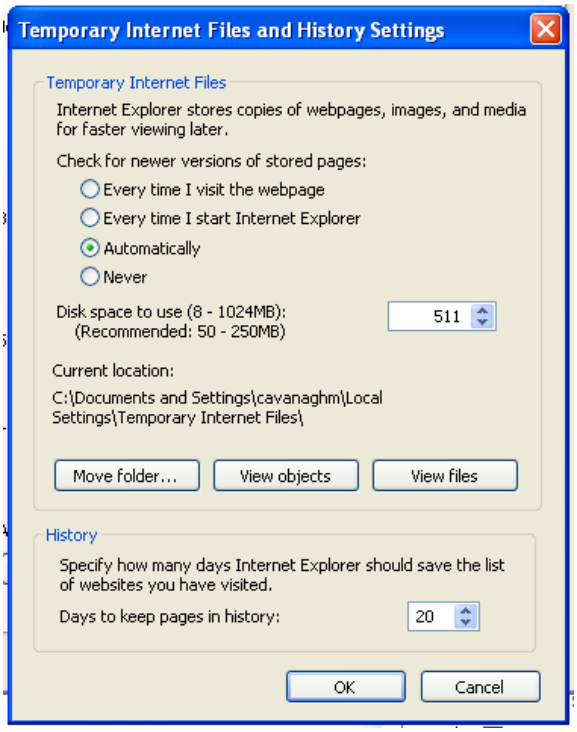
There is a known issue with Internet Explorer (IE) in that the retrieval of cached information may over-ride the loading of updated pages. If during use you find that pages or areas are not refreshing as expected (e.g. clicking on options radio buttons does not clear previous selections), this may be due to cache retrieval. To fix this, select the 'Internet Options' from the Tools menu in IE, as shown below.



The screen below should appear:



Click on **'Settings'** in the 'Browsing history' section. This opens the screen below:



Ensure that the 'Automatically' radio button is checked, as shown above (N.B. note what the current option is so you can reset if you wish after you finish your VIS Classification session.

Click **'OK'** to go back to the Internet Options screen. Now click on the **'Delete'** button in the 'Browsing history' section. The options screen below should appear.

Click on **'Delete files…'** in the 'Temporary Internet Files' section. This will delete only the stored temporary files. Please note that if you haven't cleared the temporary files for a while (or ever!) this may take some time. A progress screen will show while this is happening. Provided the green bar keeps moving, all should be fine.

It may also be advisable to delete the cookies from the IE cache (i.e. click **'Delete cookies…'** in the 'Cookies' section). This will remove all stored data that is retrieved by a range of sites, including stored log in information. This simply means that if you clear the Cookies, you will need to provide log in data when you return to any page that was using stored log in information. There shouldn't be any issues with this, but if you are unsure, please ignore this step.

When these processes are finished, click **'Close'**, then **'Cancel'** at the next screen to return to the VIS Classification screen.

Attachment 2: Cover Types Summary Information

The Cover Type Codes specify the type of measure used for the Cover values (i.e. minimum, maximum, mean and median percentage cover). The alpha portion of the codes denotes whether the measure is a numeric real value ('N') or relates to the upper and lower ranges of a cover class category ('C'). The following information is summarised from Walker and Hopkins (1990).

Code	Explanation
1N	Crown or Canopy Cover: Crown Cover is defined as the percentage of the sample site within the vertical projection of the periphery of the crowns. In this case crowns are treated as opaque. Crown cover is estimated using the mean gap between crowns divided by mean crown width (the crown separation ratio).
1C	Crown or Canopy Cover: As for 1N above but for data derived from or containing class intervals.
2N	Foliage Cover: Foliage cover is defined as the percentage of the sample site occupied by the vertical projection of foliage and branches (if woody). For ground vegetation, it is measured using line intercept methods. It will, to some degree take into account the thickness of a clump of grass. % crown cover x crown type.
2C	Foliage Cover: As for 2N above but for data derived from or containing class intervals.
3N	Percentage Cover: The percentage of a strictly defined plot area, covered by vegetation, generally applicable for the ground vegetation that has been estimated rather than measured using line intercept methods. It does not necessarily take into account thickness of a clump of grass.
3C	Percentage Cover: As for 3N above but for data derived from or containing class intervals.
4N	Projective Foliage Cover: The percentage of the sample site occupied by the vertical projection of foliage only (not branches).
4C	Projective Foliage Cover: As for 4N above but for data derived from or containing class intervals.
not applicable	Not applicable.
unknown	Unknown.